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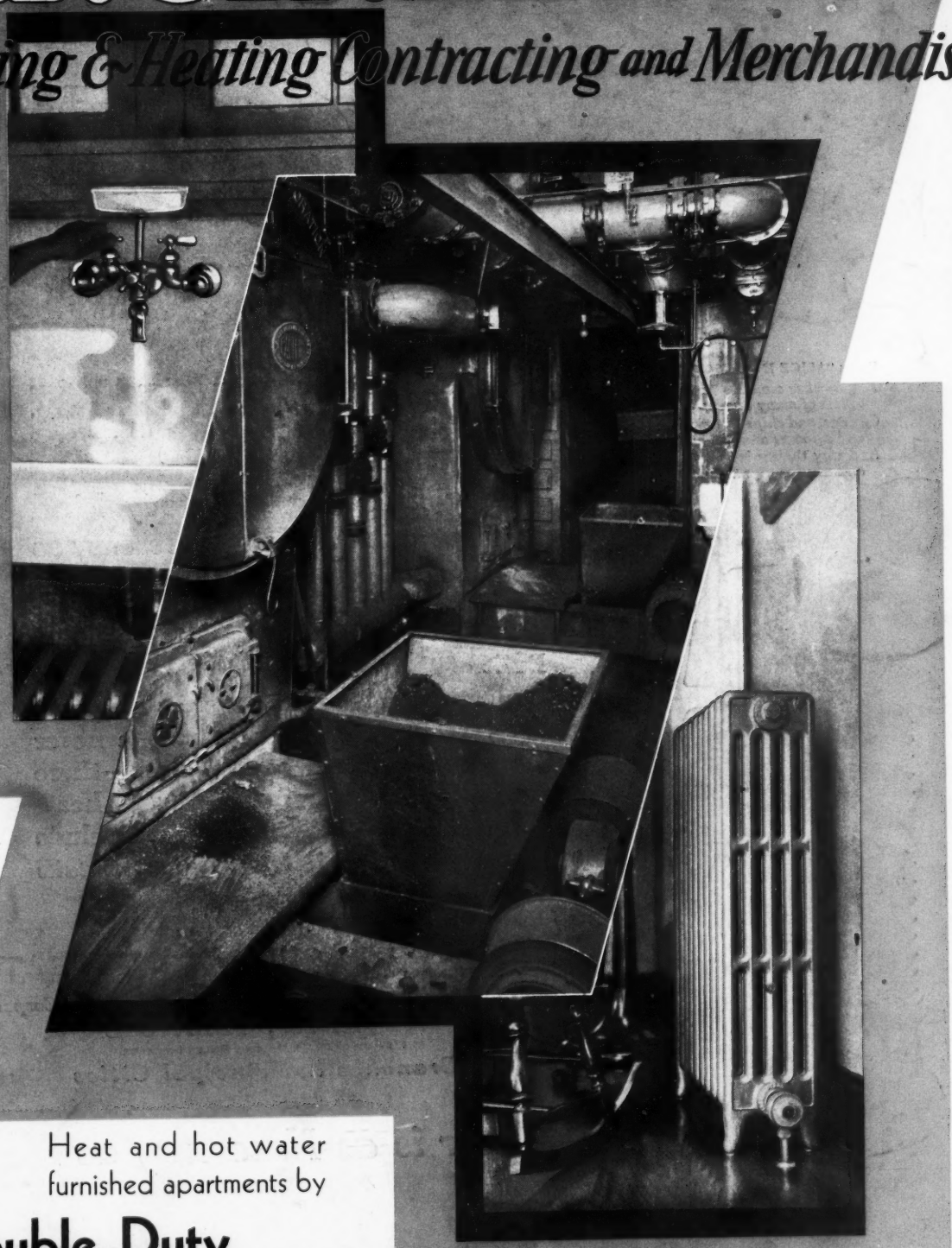
DOMESTIC ENGINEERING

Plumbing & Heating Contracting and Merchandising



Heat and hot water
furnished apartments by

**Double Duty
Stoker Installation**

NOVEMBER 29, 1930

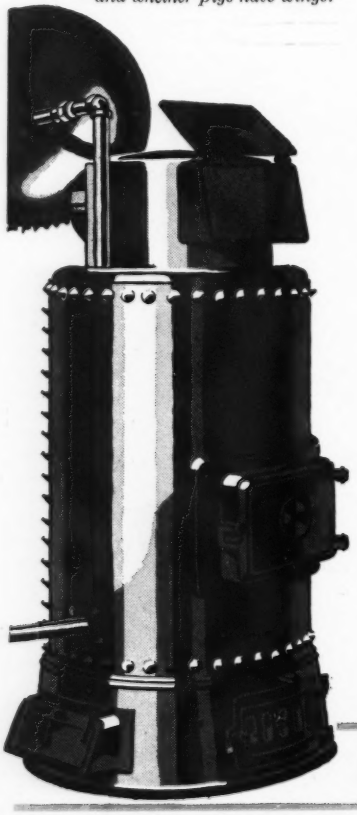
TABASCO

Steel WATER HEATERS

From: "ALICE IN WONDERLAND"

"The time has come the Walrus said
to talk of many things;
Of shoes, and ships and sealing wax
and cabbages and kings;
And why the sea is boiling hot
and whether pigs have wings."

(Had Alice and her playmates been modern folks there would have been no reason to ask about the boiling hot sea. They would have known that Tabasco Water Heaters could easily supply the whole world with hot water.)



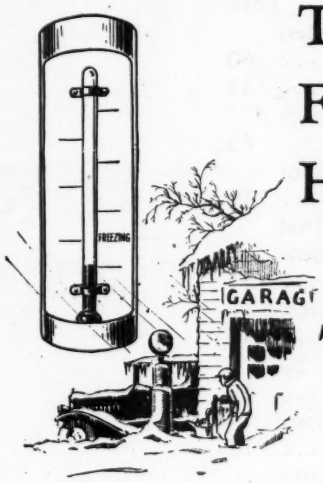
Every building of every kind needs hot water. It's as necessary as heat. So the water heater in a building is as important as the boiler.

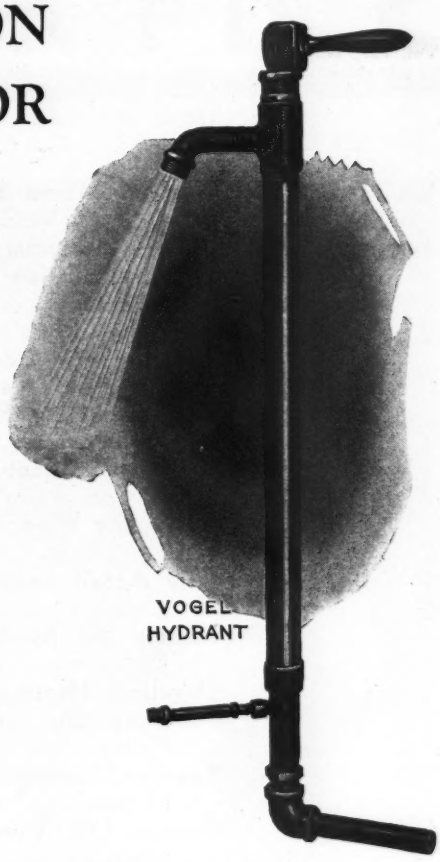
Built of the same heavy steel plate, and in the same faultless manner as Kewanee Boilers, Tabasco Heaters provide a never failing supply of Hot Water. 17 sizes—there is one just right for every building, for heating from 130 to 700 gallons per hour. Include a Tabasco on every job you figure. ***Details in Catalog No. 71.***

KEWANEE BOILER CORPORATION
division of American Radiator & Standard Sanitary Corporation
KEWANEE, ILLINOIS
MEMBER OF STEEL HEATING BOILER INSTITUTE
Branches in Principal Cities

Hot Water is as Necessary as Heat

EVERY SERVICE STATION IS A REAL PROSPECT FOR THE VOGEL PATENTED FROST-PROOF HYDRANT....





The only way service stations can be sure of a supply of water all year round which will be convenient for everyone, is to install the VOGEL Frost-Proof Hydrant outside the station.

This makes it easy for their customers, and it is absolutely safe, because it will never freeze no matter how cold the weather may get.

Go after this business now. It is profitable and there is certainly plenty of opportunities for installations of this kind.

Let us send you blotters and folders on the VOGEL Frost-Proof Hydrant, imprinted with your name and address. They'll help you get more business. Tell us how many you need.

See inside back page for VOGEL PATENTED *Seat-action closet Advertisement*

JOSEPH A. VOGEL COMPANY
Wilmington, Del. St. Louis, Mo.

VOGEL PATENTED *Frost-Proof* PRODUCTS

DOMESTIC ENGINEERING

Plumbing & Heating Contracting and Merchandising

Established 1889

Vol. 133, No. 5 November 29, 1930 Whole No. 1931

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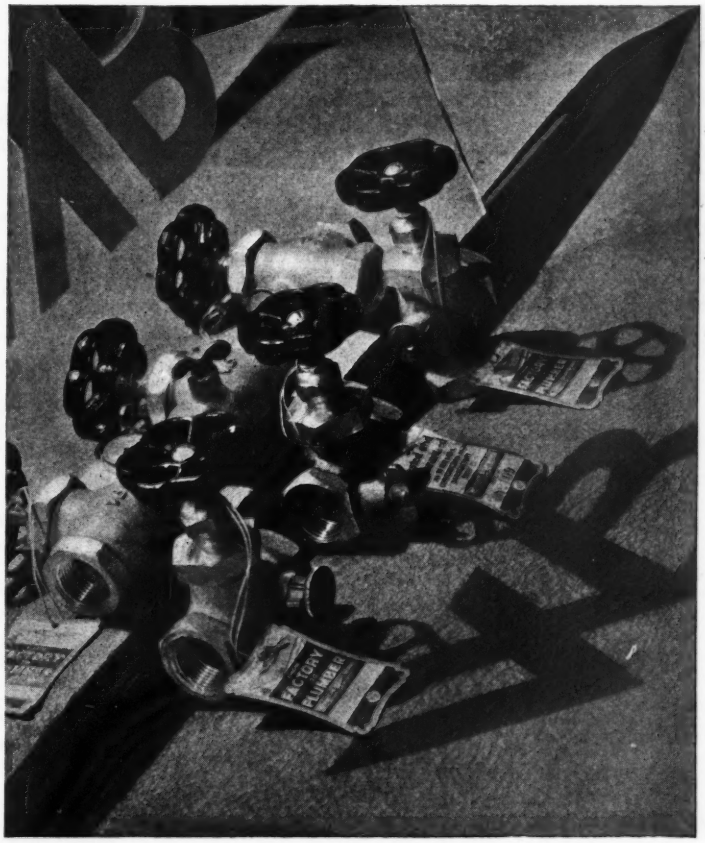
WOLVERINE

COMPRESSION STOPS . . . . . STOP AND WASTES



WE SELL THE RETAIL PLUMBING TRADE EXCLUSIVELY

ROUGH COMPRESSION WITH ALL THE INTEGRITY AND CHARACTER OF FINISHED BRASS PRODUCTS

Compression Stops and Stop and Wastes are a very important part of the plumbing system of the modern home. Though rarely used they must operate smoothly and well when called upon for actual service. . . . Weeks . . . . . months . . . . . perhaps years pass by and they are not even thought of by the home-owner . . . . . but when occasion arises for their use, he expects as flawless operation as he does of the finest fixtures in his home . . . . . That is the reason for the fine material and workmanship of all WB Rough Compression Work . . . . . with the same rigid and severe tests . . . . . and the same exacting inspection . . . . . to which all WB Compression Work is subjected . . . . . These exacting standards of manufacture go far towards materially increasing the Master Plumber's profits in this type of installation . . . . . Always easy and positive fitting with WB Rough Compression Work.

WOLVERINE BRASS WORKS
GRAND RAPIDS, MICHIGAN

DEPENDABLE
• • BRASS • •
PRODUCTS

Between Ourselves

On our front cover this week is the picture of a stoker installation. We've called it a double duty installation because this pair of stokers furnishes steam for heating and the hot water for an apartment building. The article that describes the installation is a "double duty" article. It gives data about stoker installations that we haven't seen elsewhere—and then it goes into the details of this particular installation in a way that will warm a heating engineer's heart.

Your Editor

WHAT are the factors to be considered in planning a stoker installation? This article gives them to you. How can two boilers be thrown into double harness, with provision for "driving" only one when that's all that is needed? This article tells how. What bearing has flue capacity on stoker installations? This article tells you. What is the operating time of the stokers under such conditions? The article gives this data. What is the result in terms of efficiency in meeting demands on the heating system? This article sets forth this information. Here is general and specific data that the man who is interested in stoker installations must have at his command.

"THE proof of the pudding" is presented in this issue in the "Plumbing and Heating Merchandising" section—the first pages on the sepia tinted paper. Here is a description of two remodeling jobs, each of which has turned up an actual—and substantial—profit to the owner of the remodeled property. Each job meant plumbing and heating alterations. The material is in form to quote to prospects as proof that remodeling does pay.

"THERE'S many a slip" goes the old saying. And the knife that sharpens the pencil that makes the estimate may also take a slice off of the profits. But sometimes there are other reasons why the estimate and the actual costs don't agree. William Morris told us about some of those things in his first article, and in the present issue he draws on his own experience in the plumbing and heating field to tell us about some more of the hidden reefs on which the good ship profit sometimes founders. Mr. Morris knows what he's talking about. What he gives us in these articles will be greeted with a nod of agreement on the part of readers who have seen these things happen. Of course, the purpose of his articles is to help contractors see that there are fewer "slips" and more profit.

The man who is so busy that he does not have time to read his trade paper is like the man who was so busy chopping wood that he did not have time to sharpen his axe.

"I DON'T know how any one in the trade can be without his DOMESTIC ENGINEERING. It is the same as never reading a daily paper," says H. E. Smith, Dorchester, Mass.

WITH contractors showing more and more interest in swimming pool installations, you will find in this issue a review of developments in this field as they affect the master plumber, along with accurate data on a salt water pool. Rapid advances have been made in swimming pool installation, and the pool of twenty years ago would not be tolerated today. You will want to read what two large contractors have to say who have had experience in swimming pool work. The article is by Chester D. Walz and the title is "Swimming Pool Popularity Makes Opportunity for Plumbers."

THE practical men in the field, which in our industry are the plumbing and heating contractors, are looked to and depended upon by the scientist to supply new services as advances and discoveries are made in modern science, so that these scientific discoveries may be applied to industry in a practical way. Recently, science has discovered that the preservation of valuable museum specimens, such as furs, hides and skeletons of rare and extinct species of animal and bird life, depends on the maintenance of proper temperature in the rooms where the specimens are stored. This has opened up a new field for the heating contractor in the line of air conditioning work, and it is another example of the importance of the contractor keeping abreast of the times so as to be prepared to handle new types of work as it develops. We suggest your reading the story called "Temperature Control Guards Rare Museum Treasures."

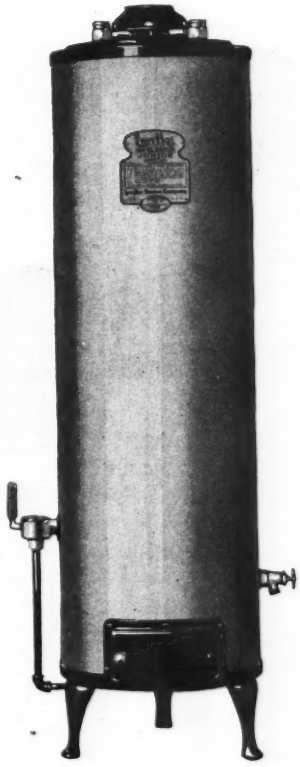
WHILE the installation of plumbing is widely regulated, in very few instances is any attention paid to the matter of gas appliances. Oakland, Calif., has recognized the dangers connected with the improper installation of gas appliances by adopting a "gas appliance code," which will be described in our next issue. The title of the story will be "California City Regulates Gas Installations."

GIVE 'EM A CHANCE

Be an optimist — there's business to be had if you will only think so.

Give your customers a chance to buy the

EverHot
AUTOMATIC
WATER HEATER



They are all from Missouri, but you can quickly show them that the EverHot gives them dollar for dollar value and More Joy per Dollar than any other household appliance, for its service extends over every hour of every day and it directly benefits every member of the family.

The EverHot is Quality—it is trouble-free—it renders Perfect Automatic Hot Water Service—with a reasonable cost for operation—what more can you offer to get them to buy?

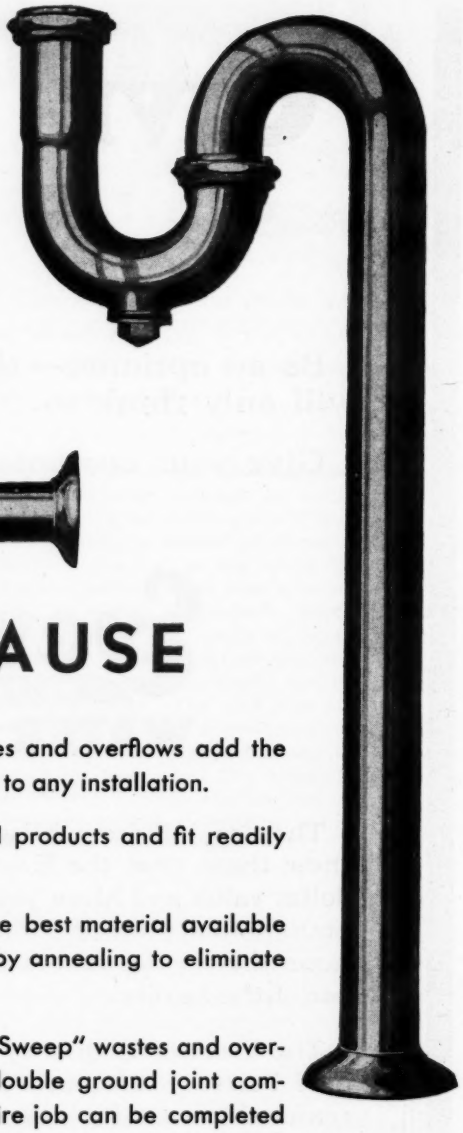
Give 'em a chance to spend that money they've been hoarding. Talk EverHot day in and day out, and make the balance of 1930 show a real profit and pave the way for a prosperous 1931.

Folders and sales helps are yours for the asking
Ask particularly for Folder J-2

EverHot Heater Company

5211 Wesson Avenue **Detroit, Michigan**

For Your Remodeling Work...



BECAUSE

1. "Clean Sweep" wastes and overflows add the necessary touch of quality to any installation.

2. They are all standard products and fit readily into any layout.

3. They are made of the best material available and carefully toughened by annealing to eliminate season cracking.

4. By combining "Clean Sweep" wastes and overflows with the Desanco double ground joint compression coupling, the entire job can be completed in a minimum length of time.

5. These products will permit you to sell the job at a price that will interest your customer.

DETROIT SANITARY MANUFACTURING COMPANY
DIVISION OF
DETROIT BRASS & MALLEABLE WORKS
DETROIT * * * * MICHIGAN

AN ARM THAT CAN BE SWUNG

around the overflow pipe to any desired angle — makes this

Overflow Tube and TWO PIECE ADJUSTABLE GUIDE ARM

the most convenient of any

a STOKES Hard Rubber Product

Look for the

Mark of Quality

Jos. Stokes RUBBER CO.

Trenton, N. J.

Clinch your business by fittings which are the last word in design and operation. This Hard Rubber Overflow Tube is equipped with a two piece Adjustable Flush Guide Arm, which has the patented feature of being adjustable for the float valve in every way, from $1\frac{5}{16}$" to $2\frac{3}{4}$". No other type can be adjusted to such a wide range.

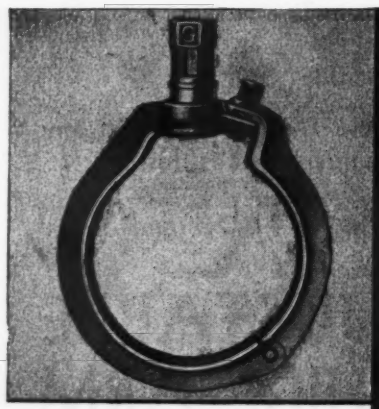
This Guide Arm can be swung around the overflow pipe to any desired angle.

Hard Rubber Fittings by Stokes are attracting greater attention in the plumbing industry than ever before. It will pay you to investigate.

Write for prices and samples

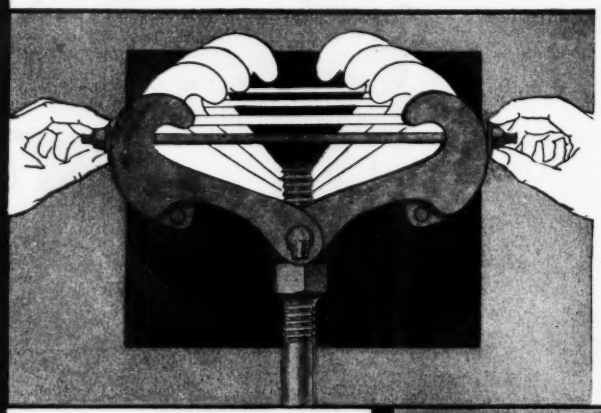
JOS. STOKES RUBBER CO.
Trenton, N. J.
Canadian Plant, Welland, Ontario

Hard Rubber Products in Every Conceivable Form



Grinnell Adjustable Swivel Hangers lock themselves at the level where they are set. They are self-locking and they stay locked.

There is a Grinnell Hanger *for every* Construction Need



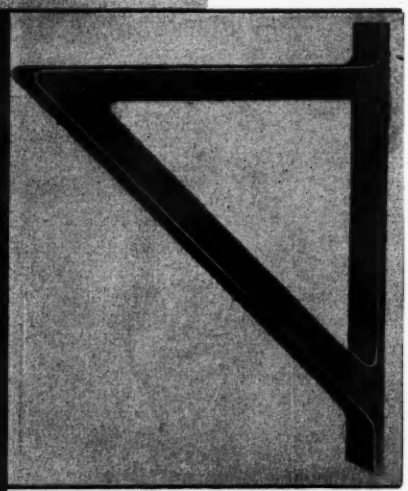
Three sizes of the rugged UFS—Universal Forged Steel—I-Beam Clamp Hangers carry pipe from ¾ inch to 24 inch, and fit flanges of all standard I-Beams.

NEITHER the steamfitter nor the local blacksmith has the proper equipment to produce hangers economically.

Large contractors will not stand for the expense of brackets and hangers made on the job. Nor will they take chances on their unknown strength. That is why so many specify Grinnell hangers. They know that there is a size and model in the *complete* Grinnell hanger line for every construction need.

Grinnell swivel hangers are self-locking and they stay locked at the level where they are set. To level a line takes only a few seconds.

Grinnell Universal I-Beam Clamp Hangers of forged Steel are being specified by engineers for suspended floors, ceilings, conduits, etc., as well as for pipe lines.



This Grinnell (medium weight) Welded Steel Bracket is designed to support a maximum load of 1,500 pounds. It may be used with our Adjustable Pipe Stands, Anchor Chairs, Pipe Seats, etc., in the same way as our Heavy Brackets.

Why should an expert steamfitter have to turn his hand to forging a support or hanger? His time is too valuable.

Write for the Data Book

You will find the Grinnell Pipe Hanger Catalogue and Engineering data on Pipe Fabrication Book valuable for their ready reference tables covering pipe hangers and supports, fabrication data, etc., and the Grinnell Universal Forged Steel I-Beam Clamps. Write for your copy of either one or both. Address Grinnell Company, Inc., 305 West Exchange St., Providence, R. I.

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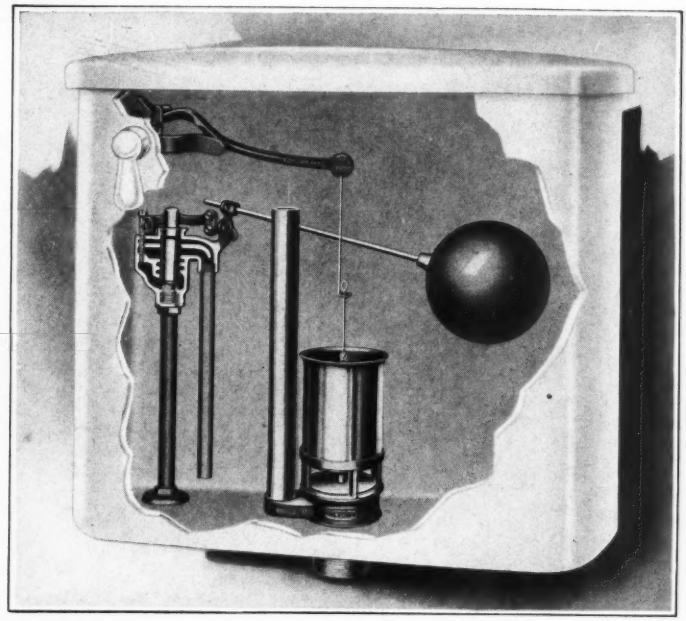
QUIET and ENDURING

MR. PLUMBER...



WHAT MORE CAN YOU ASK

In all Curtin valves and ballcocks there are six points of undeniable, superior construction:

1. Long Lived
2. Economical
3. Silence of Operation
4. Cast Bronze and Copper Construction
5. Seats and Plungers Chromium Plated
6. Regulated for high or low water pressure.

What more can you ask, Mr. Plumber?

A. F. CURTIN VALVE COMPANY
Medford Massachusetts

CURTIN

TANK NOISELESS FITTINGS

You whose children have food this Yuletide

Give unto those who are *starving*

Scent of holly in the air . . . . a gay tree brimming with holiday blessings . . . . perfume from the kitchen where a generous Christmas dinner is being readied by you and yours . . . and a mother, her happy, healthy children in her arms, looking out upon the serene night, in which celestial candles gleam and glitter. Home . . . . sanctuary . . . . gifts . . . food . . . . protection.

During good times or bad, the average American home manages to approach the Yuletide season with joyous anticipation. And the sympathetic urge to help those who are less fortunate, is, always, a national characteristic.

But today . . . . the need for "having a heart" is more tragic, more urgent, more terrifyingly necessary, than ever in the world's history. American children and children of many nations, are STARVING. As the facts accumulate, this situation might well cause us to shudder with horror . . . "Starving Children" . . . . not a pleasant thought!

What a beautiful thing it will be for YOU, this Yuletide, to give, if but modestly, to these tiny sufferers to whom even a crust of dry bread will come as a blessing. "GOLDEN RULE WEEK" is a constructive opportunity in this direction. The long arm of its vast charity reaches out and finds these hungry youngsters . . . . feeds them. You will do YOUR share, we know.

"Whatsoever Ye would that others should do unto You do Ye even so unto Them . . . . .

"GOLDEN RULE WEEK"

DECEMBER 7—14

The donor may designate his gift for any philanthropy in which he is especially interested and one hundred cents of every dollar will go as designated—none for expenses.
Undesignated gifts will be allocated by the Survey Committee, after careful investigation to meet the most acute needs through the most efficient agencies.

THE GOLDEN RULE FOUNDATION,
Lincoln Building, 60 E. 42 St.,
New York, N. Y.
Enclosed find $ . . . . . to be used in meeting the needs of suffering humanity.
NAME . . . . . .
ADDRESS . . . . . .
Designated for . . . . . .

THIS SPACE IS CONTRIBUTED BY
DOMESTIC ENGINEERING

DECEMBER 7—14

THE CELEBRATED SKIP TOOTH DIE
(Genuine Nye)
REG. U. S. PAT. OFFICE

A Letter from Harry G. Nye

November 29, 1930

To the Plumbers and Steamfitters of the U. S. A.

PEE-WEE GOLF

Fellow Citizens:

If all the vacant lots in the United States were placed end to end, they would be found to be covered with golf courses, in egg form. The gopher has been driven from his hole, and the hole is being used for other purposes. Some say it is golf, some say it is not, and some say—but never mind what some say.

There is no denying that the new game has its advantages. All you need is a ball, a putter and a quarter, and the ball and putter are furnished. You don't have to belong to a $150,000 club or carry $75 worth of them around with you. You don't have to drive ten miles and walk three, but just around the corner.

I might be tempted to invest some money in one of these sandlot golf courses, if I had any, if I hadn't once invested $3.50 in a mah jong set. Mah jong now is about as popular as the anti-saloon league in a wet ward. It will take at least one winter to decide if the new game is just a weed or a hardy perennial.

I play a passable game of golf myself, the three-mile kind. I say passable because I am always having to get off the course to let a foursome pass through. I am particularly proud of my putting, as I once sank a putt of ten yards, making a perfect carom off a divot three yards from the hole.

Patents Pending

THE LIGHTWEIGHT CHAMPION

Threads—Cuts off and Reams

Capacity ½ to 2 Inches

Furnished with either A. C. Motor Universal Motor or Gasoline Engine

They told me, in the new game, every hole could be made in one. I thought they meant stroke, but they meant hour. However, I hold the course record. I drove off 1 and made 18. Not all eighteen in one, I don't mean, although I believe it could be done. This may not be golf, but it has all the cussedness of the real thing.

The dollhouse may take the place of the clubhouse, and again it may not. But one thing is certain; nothing will ever take the place of Nye Tools. Buying Nye Tools is the best course, as it is the course without a hazard. There's no use puttering around with poor tools. Truly yours,

Harry G. Nye

OTHERWISE KNOWN AS

THE NYE TOOL & MACHINE WORKS

4120-30 Fullerton Avenue :: Chicago

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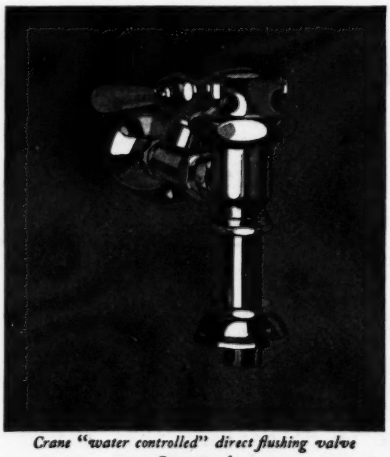
THE CELEBRATED SKIP TOOTH DIE
(Genuine Nye)
REG. U. S. PAT. OFFICE

1855 · SEVENTY-FIFTH ANNIVERSARY · 1930

The growth of the plumbing industry is rooted in co-operation



Crane "water controlled" direct flushing valve C13000-A

The story of the plumbing industry's progress to the great position it occupies today, is the story of co-operation.

Without this co-operation, houses might still be built with the barest essentials of sanitation . . . bathrooms be dark closets . . . fixtures, ponderously ugly.

Through the combined efforts of the manufacturer and the master plumber, modern plumbing has evolved to beauty . . . the public has been educated to desiring it.

Crane Co. . . . founded in the earliest years of modern plumbing . . . has never lost sight of the necessity for co-operation. Always it has recognized that the good of the industry is its good. So it has never hesitated to employ the best engineers to improve the mechanics of plumbing; the most noted designers to improve the appearance of plumbing; the finest artists to provide alluring backgrounds for plumbing.

So, Crane Co. has spread a huge blanket of advertising and publicity over the country for beautiful bathrooms, and opened Exhibit Rooms for the use of every plumbing contractor and his customers, where the fixtures that create such rooms are on view.

Now in its 75th year, mindful that the growth in the future, like that of the past, must be rooted in co-operation, Crane Co. dedicates all its resources, its research, and its exact methods towards achieving for the plumbing industry a future more brilliant even than its past.

Valves CRANE *Fittings*

CRANE CO., GENERAL OFFICES: 836 S. MICHIGAN AVENUE, CHICAGO
NEW YORK OFFICES: 23 W. 44TH STREET

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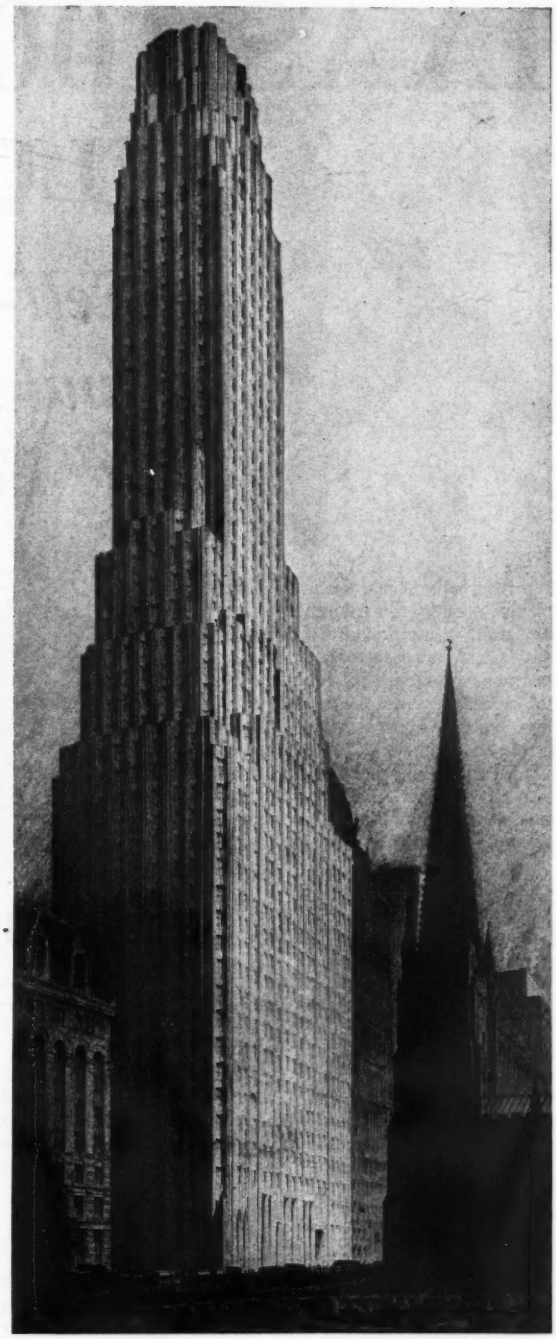
Specify

WALWORTH
VALVES
FITTINGS
AND TOOLS
for

PLUMBING
AND
HEATING



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IRVING TRUST COMPANY BUILDING, ONE WALL STREET

Architects: Voorhees, Gmelin & Walker
Mechanical Engineers: Meyer, Strong & Jones
General Contractor: Marc Eidlitz & Son, Inc.
Plumbing Contractor: John Weil Plumbing Co.
Heating Contractor: Baker, Smith & Co.

● In the fifty-story Irving Trust Company Building, simplicity and beauty are achieved by an unusual feature of design—the angled walls. ● Large blocks of stone are so joined and fitted as to form a series of slight angles in and out from the street. ● These, catching sunlight and shadows, make a new picture in the narrow gallery of famous Wall Street views.

● And so also Walworth, by supplying fire-line fittings and brass fittings and all of the valves for both plumbing and heating, makes another notable contribution to the development of New York's outstanding new buildings.

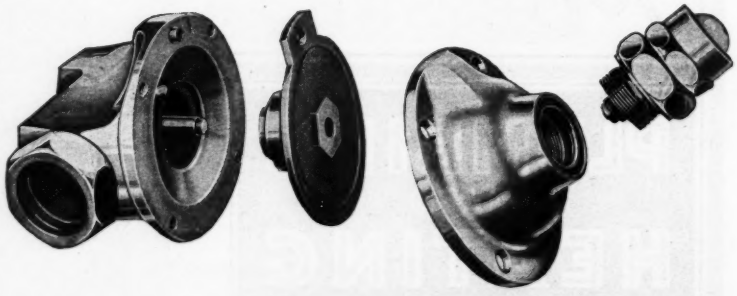
WALWORTH COMPANY
General Sales Offices: 60 East 42nd St., New York
Plants at Boston, Mass.; Kewanee, Ill.; Greensburg, Pa. and Attalla, Ala.
DISTRIBUTORS IN PRINCIPAL CITIES OF THE WORLD

WALWORTH
VALVES - FITTINGS - AND TOOLS

HAAS 100 SERIES FLUSH VALVES

Self-Cleansing • Trim and Neat • Few Parts • Easily Installed •

Differing from all others, Haas 100 Series Flush Valves offer the plumber and the ultimate user many definite advantages. Their few parts and easy installation add to an already fine profit margin for you. Their neatness, coupled with their positive self-cleansing feature, brings satisfaction and trouble-free operation . . . Front and back, diaphragm, and handle or push button form the essentials — note them at the right. Above is a unit assembled — as neat and trim as *modern* methods can make it.



Haas Made—Haas Guaranteed

Of course *Haas-made* means Haas guaranteed—but with this series of flush valves the guarantee is *extra liberal.* GUARANTEED FOR FIVE YEARS! And many Haas Flush Valves of similar construction are now serving their eighteenth and nineteenth years of untroubled service. Haas products have served the plumber for 25 years—Haas quality has been steady and dependable—Haas prices always fair—and Haas profits always right. This 100 Series Flush Valves have all these Haas traditions inbuilt in them. Specify them. Use them. Get them from your jobber.

Get your copy of Catalog "C"

Get your copy of this new catalog, which is a combination of six separate catalogs bound into one complete volume. Has all the Haas products from frost-proof closets to ball cocks. Your jobber will send it—or we will be glad to do so. Write either of us today —while it's on your mind. You'll profit by it.

THE PHILIP HAAS CO.

DAYTON, OHIO, U. S. A.

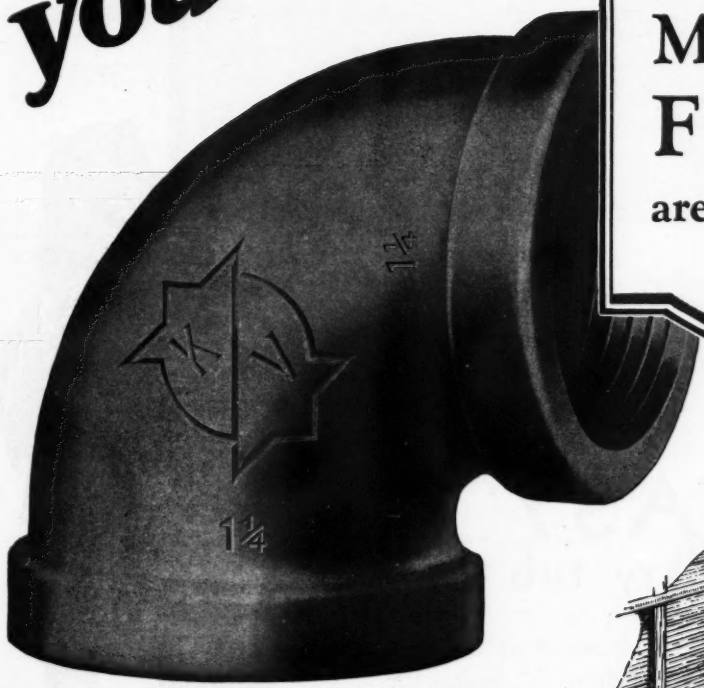
Haas Flush Valves

Do you know-

You pay no premium for Kennedy Quality and accurate machine work because

KENNEDY Malleable Iron FITTINGS

are always sold at Standard market prices



This is No. 7. of a series explaining why Kennedy Malleable Iron Fittings protect you and your customers

Note these other good reasons for using Kennedy Fittings

Made in a 15-acre plant devoted exclusively to their manufacture.
Furnished in over 1000 different types and sizes.
Metal carefully selected and tested to assure 45,000 lb. per sq. in. tensile strength.
Annealed for over 200 hours to assure true malleability.
Precision-machined to assure alignment to 0.010-in. limits.
Extra wide chamfer and clean sharp threads to help speed up pipe-fitting.
Heavy, uniform, thorough galvanizing by hot-dip process.
Size marked on all fittings for convenience.
Large stocks maintained in warehouses located at principal industrial centers.
Readily obtainable from jobbers everywhere.

Kennedy Fittings go on the pipe easily, assure accurate alignment and make tight joints quickly.

THE KENNEDY VALVE MFG. CO., ELMIRA, N.Y.

Warehouses and sales offices in principal cities

KENNEDY

VALVES-PIPE FITTINGS-FIRE HYDRANTS

One of the fine residences in the Richard J. Seltzer development near Devon, Pa. Each residence must stand on a tract of at least ten acres.

This House of Seven Bathrooms Has Speakman Showers and Fixtures Throughout, Including the

ACT-EASY
waste on every tub

THE RICHARD J. SELTZER development at Leopard, near Devon, Pa., just outside of Philadelphia, is possibly the most exclusive of its kind in the country. Each residence must stand on a tract of at least 10 acres. Dwellings of twenty and thirty rooms are being erected. One of these beautiful homes, which is nearing completion, has seven richly tiled bathrooms on the second floor!

It is a tribute to the up-to-dateness and quality of Speakman Showers and Fixtures that they were preferred for this fine residence.

In addition to an Act-Easy Waste on every tub, Speakman Showers, Lavatory, Sink and Bath Fixtures, were included in this installation.

SPEAKMAN COMPANY
Wilmington, Delaware

K-4656
New Speakman Act-Easy Pop-up Bath Waste which has these features:

Adjustment of lift rod is made from the front by removing overflow cover. Once made, this adjustment is permanent.

Handle is easy-acting and cannot stick—has a broached spindle. Lift rod is connected to the handle and is positively operated both up and down.

Yoke is adjustable to allow for variations in tubs.

Lift rod is guided by back of waste tube. Rod is smooth from one end to the other.

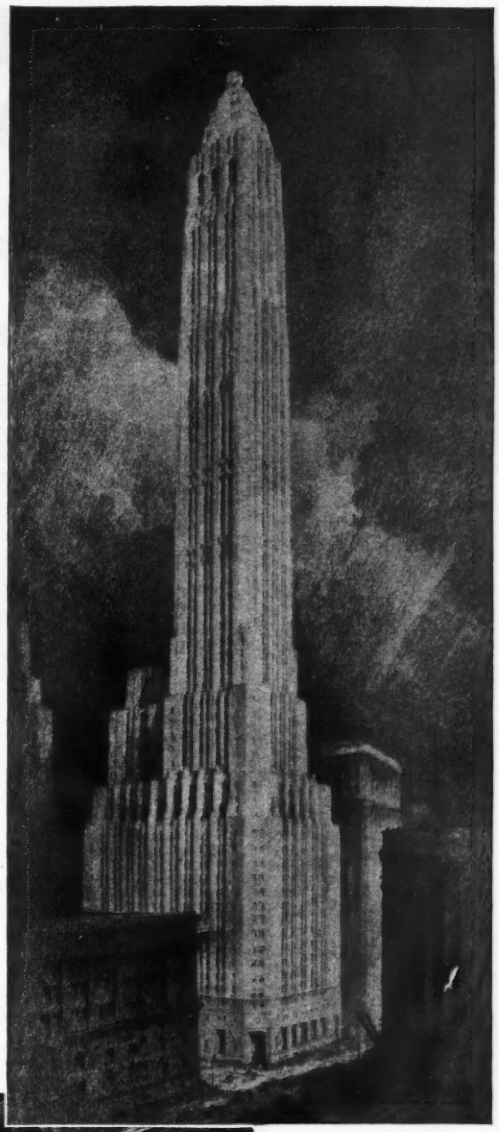
Waste tee is reversible to allow for bringing outlet parallel with the arm for shallow floor construction.

Tail piece is threaded to screw into the horizontal outlet of the tee when it is reversed.

Slip nut on waste tee is 1 ½" I.P. size, so that nut and tail can be discarded and iron pipe size connection used if desired.

SPEAKMAN SHOWERS *and* FIXTURES

"YOUNGSTOWN" *in the Specifications Means Ease in the Installation . . .*



WHEN YOUNGSTOWN pipe is specified for the plumbing, heating, sprinkler or refrigerating systems of a building it is a specification that means an easy installation for the contractor. This life-time steel pipe, while tough and sturdy, is, nevertheless, easy to cut, thread and install on the job, making its installation both easier and faster—features which instantly appeal to contractors.

Coupled with this greater ease of installation is its long-lived endurance which insures a permanent piping job, benefiting the contractor, architect and owner alike.

If you are not now using Youngstown steel pipe, try it in your next job. It is specified by leading architects, used by leading plumbing and heating contractors and stocked by leading jobbers and dealers from coast to coast.

The YOUNGSTOWN SHEET AND TUBE COMPANY
One of the oldest manufacturers of copper-steel, under the well-known and established trade name "Copperoid"
General Offices—YOUNGSTOWN, OHIO

DISTRICT SALES OFFICES

ATLANTA—Healey Bldg.
BOSTON—80 Federal St.
BUFFALO—Liberty Bank Bldg.
CHICAGO—Conway Bldg.
CINCINNATI—Union Trust Bldg.
CLEVELAND—Terminal Tower Bldg.
DALLAS—Magnolia Bldg.
DENVER—Continental Oil Bldg.
DETROIT—Fisher Bldg.
KANSAS CITY, MO.—Commerce Bldg.
MINNEAPOLIS—Andrus Bldg.
NEW ORLEANS—Hibernia Bldg.
NEW YORK—30 Church St.
PHILADELPHIA—Franklin Trust Bldg.
PITTSBURGH—Oliver Bldg.
SAN FRANCISCO—
55 New Montgomery St.
SEATTLE—Central Bldg.
ST. LOUIS—525 Louderman Building
YOUNGSTOWN—Stambaugh Bldg.
LONDON REPRESENTATIVE—
The Youngstown Steel Products Co., Dashwood House, Old Broad St., London, E. C. England

The City Bank—Farmers Trust Bldg. New York City, where permanence is assured in the plumbing system by Youngstown Steel Pipe, and in the ventilating system by Youngstown Copperoid Steel Sheets.

Architects—CROSS & CROSS New York
Mechanical Engineer—CLYDE R. PLACE, New York
Builders—GEORGE A. FULLER CO., New York
Plumbing Contractor—J. L. MURPHY CO., New York
Ventilating Contractor—BAKER SMITH & CO., New York

YOUNGSTOWN

GALVANIZED SHEETS PROTECT SAVE WITH STEEL

WISECO PRODUCTS

This HANDY BATH COMBINATION consisting of BATH COCK, WASTE and OVERFLOW and SUPPLIES complete in one package is a great convenience and a big time saver for both the jobber and the plumber.

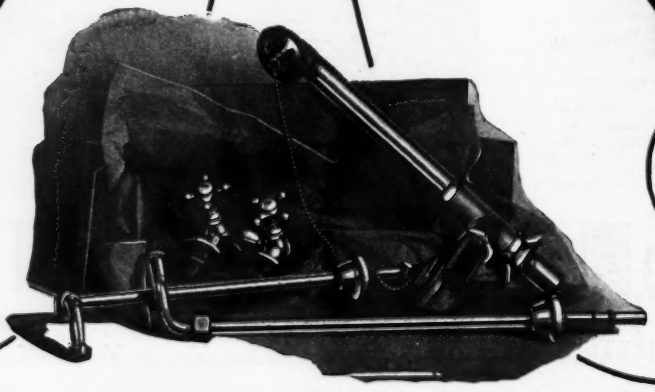
ASK FOR IT

J. B. WISE, INC.

WATERTOWN, N. Y.

New York
Philadelphia
Atlanta

Chicago
Los Angeles
Seattle



THE STANDARD OF QUALITY SINCE 1877

TRADE MARK

STREAMLINE

REG. U. S. PAT. OFFICE

Mueller STREAMLINE Hard Copper Pipe and Fittings Are the Ideal Materials for Hot Water and Steam Heating Installations

An installation of Mueller STREAMLINE Copper Pipe and Fittings in average residence buildings costs no more than any other material generally used for the purpose and is the lowest in initial cost of any non-ferrous installation. Even in larger buildings where the initial cost may be somewhat higher, if the fact is taken into consideration that copper is everlasting and its salvage value is practically 100%, even after years of use, if installed again for the same or similar service, then its cost is very much lower. In addition, smaller sizes in STREAMLINE Copper Pipe can be used on hot water lines than corresponding service in other materials generally used for the purpose.

HERE IS SOME VALUABLE INFORMATION FOR USE ON YOUR HOT WATER HEATING JOBS:

Since the shoulder inside a STREAMLINE Fitting against which the pipe rests, is the same thickness as the pipe wall, flow resistance is cut to a minimum. STREAMLINE Copper Pipe is non-clogging, thereby retaining its full, uninterrupted waterway. These qualities permit the use of the following sizes of radiator connections for gravity hot water heating in medium sized buildings or residences.

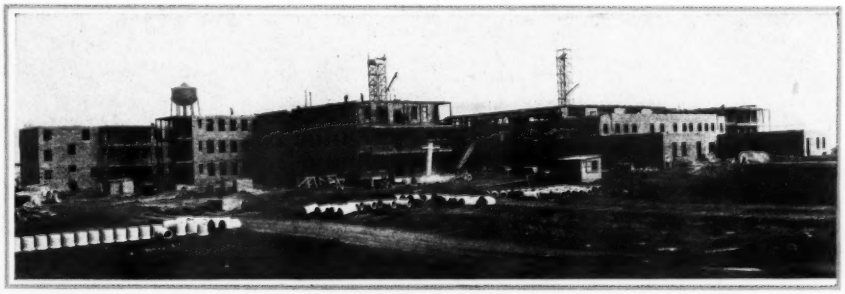
Copper Pipe Sizes	First Story	Second Story
3/8"	0-25 sq. ft.	0-30 sq. ft.
1/2"	26-60 sq. ft.	31-90 sq. ft.
3/4"	61-100 sq. ft.	91-125 sq. ft.

The size of mains must be equal to or larger in cross section than the area of all the branches; workmanship must be first class and adjustable radiator valves must be used.

Under the above conditions the Mueller Brass Company will guarantee its STREAMLINE Copper Pipe and Fittings in the above sizes to carry ample water circulation.

A Mueller STREAMLINE Copper Pipe and Fitting installation radiates very little heat and in hot water lines, steam lines, etc., can be very often installed without insulation.

The public is fast becoming copper minded. Appearance and permanence are qualities they demand. It will pay you to become thoroughly acquainted with this amazing new installation that costs you less than any other non-ferrous material for the same purpose but gives your customer a better job and one that will last as long as the building itself.



A STREAMLINE Installation
Ypsilanti State Hospital, Unit No. 1, Ypsilanti, Michigan.
Architect: Albert Kahn, Detroit, Mich.
Plbg. & Htg. Contr.: Lorne Plbg. & Htg. Co., Detroit, Mich.

Patent 1,770,852
Patent 1,770,502
Other Patents Pending

Patent 1,770,852
Patent 1,770,502
Other Patents Pending

Patent 1,770,852
Patent 1,770,502
Other Patents Pending

Patent 1,770,852
Patent 1,770,502
Other Patents Pending

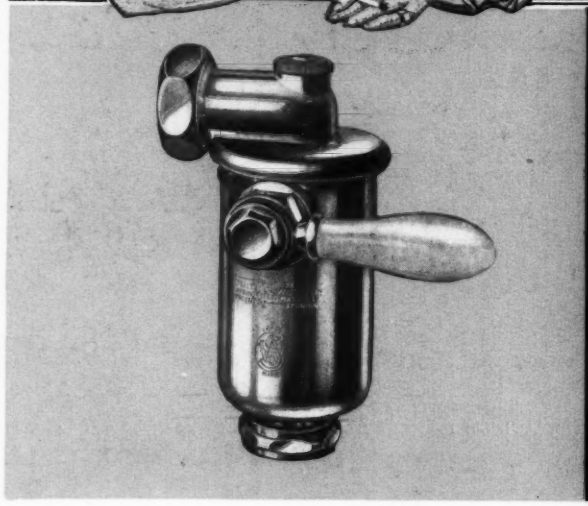
Patent 1,770,852
Patent 1,770,502
Other Patents Pending

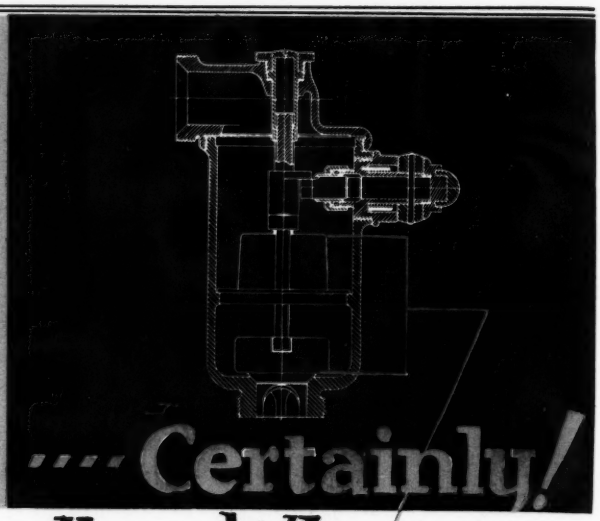
Mueller Brass Co.

Port Huron, Mich.

Three Generations of Brass Making

....Quiet?





....Certainly!

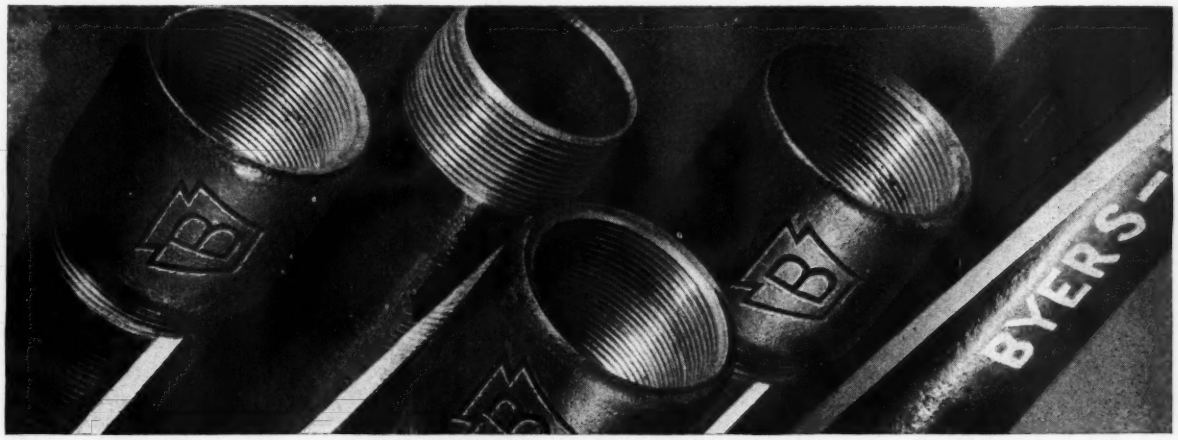
Here's Why

The design of the Smith & Wesson Flush Valve, together with its precision workmanship and all metal construction, allows the perfect functioning of all parts.

Due to this ALL METAL CONSTRUCTION and simple adjustment, there is nothing to wear out and become noisy.

SMITH & WESSON
FLUSH VALVE DIVISION
SPRINGFIELD MASS.

SMITH AND WESSON FLUSH VALVES



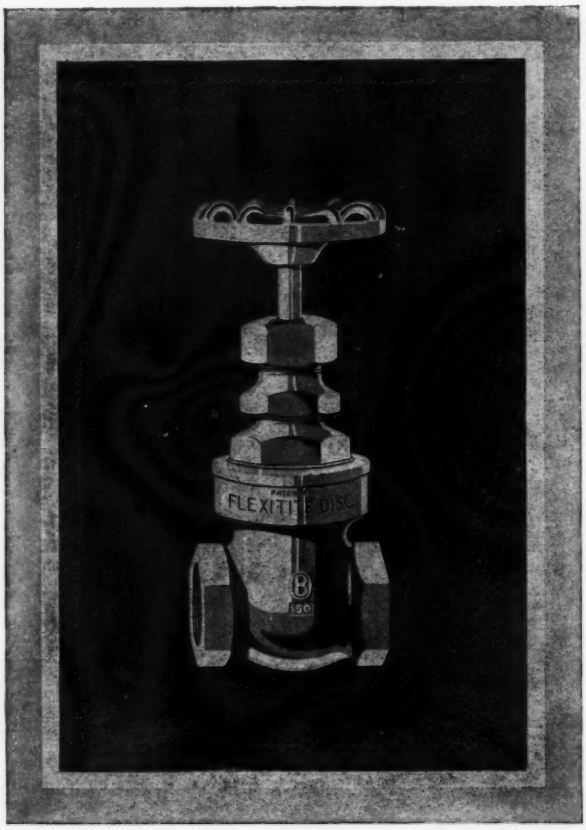
"PIPE PRESCRIPTION"

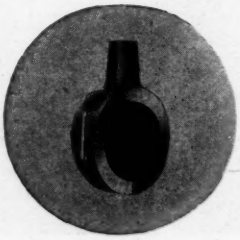
IS A SECRET OF PLUMBER REPUTATION

MODERN plumbers today "prescribe" for pipe problems just as medical specialists prescribe for human ailments. Economy and service considered, pipe for cold water is not always pipe for hot water. In any "Pipe Prescription," there is a definite and important place for Byers Genuine Wrought-Iron Pipe. For over 60 years leading plumbers have been building and safeguarding their reputations by installing Byers Genuine Wrought-Iron Pipe in the many places where its superiority and economy are established. In unusual cases when your experience does not furnish a guide, our advice is placed at your disposal. Look for the Spiral Stripe! Write to A. M. Byers Company, Pittsburgh, Pa. Established 1864.

BYERS • GENUINE • WROUGHT-IRON PIPE

AN INVESTMENT—NOT AN OUTLAY





The FLEXITITE Disc

The Flexitite Disc is the reason for first-class performance in O-B Flexitite Disc Gate Valves. It is made of one piece and is as rigid as a solid wedge except the faces, which are flexible. It will *shut off tight.*

The Four Essentials to Valve Choice

"VALVE preference" says a prominent contractor, "should be determined on the basis of valve cost; ease of installation; valve performance; and the business policy of the source of supply."

A regular "natural" for O-B Valves. For regardless of any extraordinary quality they might possess; regardless of any advantages accruing from patents, the price of O-B Valves compares favorably with the prices of other high quality valves.

As to the ease of installation, it is a well-known fact that the meticulous care exercised in machining and finishing O-B Valves provides for quick make-up and easy installation—a time-saving combination that gives "an extra profit in the make-up."

And valve performance! Does anybody need to be reminded of the performance of the Flexitite Disc Gate Valve—*the* gate valve that SHUTS OFF TIGHT? Or of the O-B Packless Radiator Valve? Or of the O-B Composition Disc Valve? Each and every type of O-B Valve performs peaceably and positively throughout the years that follow installation.

Now, regarding policies. O-B cannot and would not try to dictate the policies of the wholesalers who distribute O-B Valves. But it can, and does, *pick* those wholesalers whose business policies conform to the best interests of your industry. And ethics among wholesalers is just as important to the welfare of plumbers and heating contractors as the very contracts from which they make their living.

Ohio Brass Company
Mansfield, Ohio
1339V

Ohio Brass Co.

NEW YORK PITTSBURGH PHILADELPHIA CHICAGO ATLANTA BOSTON CLEVELAND ST. LOUIS WM. P. HORN CO: LOS ANGELES SAN FRANCISCO SEATTLE

PORCELAIN INSULATORS
LINE MATERIALS
RAIL BONDS
CAR EQUIPMENT
MINING MATERIALS
VALVES

MERION

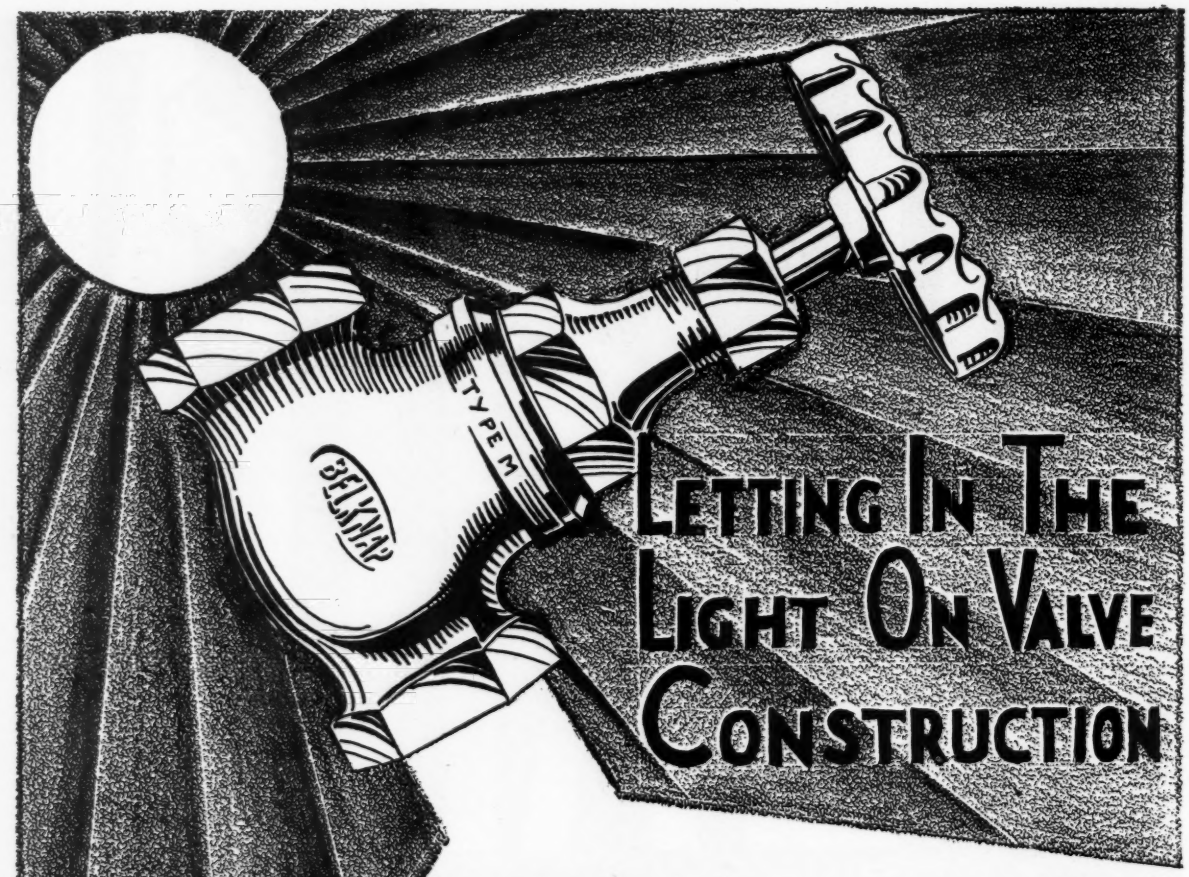
HOT WATER HEATERS

Merion Heaters are made to make profits. They are fast selling because of their low price and they stay "sold" because of the trouble-free service they give.

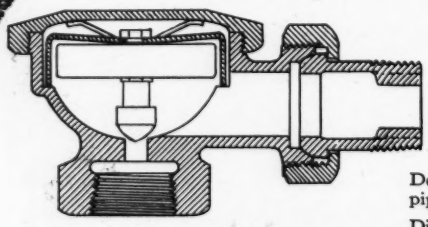
If you are not cashing in on Merion Heater Profits, now is the time to start.

Write us for complete details and sales helps.

JOHN WOOD MFG., CO.
CONSHOHOCKEN • • PENNA.



LETTING IN THE LIGHT ON VALVE CONSTRUCTION



Note arrangement to prevent steam hammer

Fig. 134

Belknap Return Steam Trap

(Patented)

Designed for vacuum, vapor or any two-pipe steam system.

Diaphragms shielded against steam hammer (see cut).

Shield guarantees permanent alignment of closing member.

Sizes ½" and ¾".

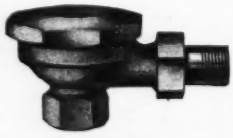
If desired, this style of trap may also be procured equipped with union-90° elbow swivel at outlet end, making unnecessary the carrying of rights, lefts, etc. (In this case specify Fig. 135).

Made of bronze and other non-corrosive metals.

Body and parts rough nickel plated, with exception of cap union nut and swivel, which are beautifully polished and nickel plated.

Each trap tested and guaranteed for service up to 15 pounds boiler pressure.

BELKNAP



(Patented)

Write for Detailed Information

THE BELKNAP MFG. COMPANY
BRIDGEPORT ∴ CONN.

67 Years of Valve Manufacture

Every Inquiry
that comes in from—

—an electro plater, photo-engraver, battery service station, school, hospital or other place where they use acids, opens up *an opportunity for extra profit* for you. They need soil pipe that will not corrode, or leak at the joints. *Recommend Duriron!* No installation difficulties—it interchanges with Ex. Hy. C. I. pipe, and is calked in the same way.

THE DURIRON COMPANY, INC. 410 N. Findlay Street DAYTON, OHIO

Sales Offices in 36 Principal Cities

DURIRON ACID PROOF DRAIN-PIPE

Have you our price list on file? Shall we send one?

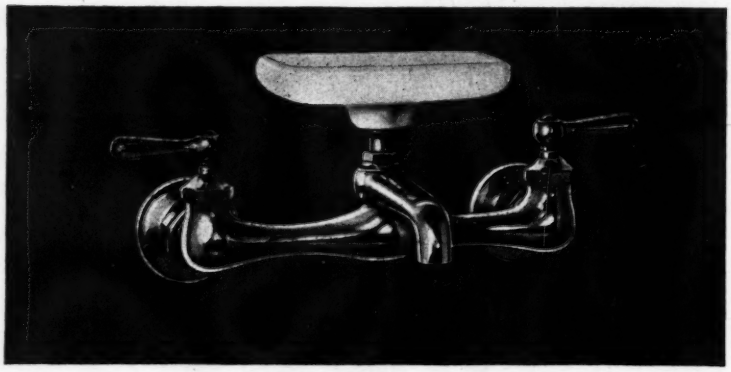
NEW BEAUTY IN SINK FAUCETS

THESE interesting additional sink fittings are made to Kohler requirements in every detail. The metal used is real red brass, high in virgin copper content, heavily plated with chromium or nickel of lasting luster. All parts are engineered for simpler, surer, enduring efficiency.

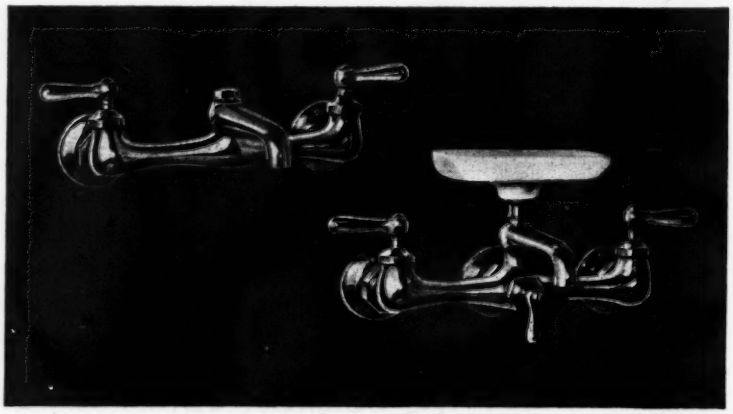
Note the many strong points of these new mixing faucets, in exposed and concealed types. The tapered one-piece yoke has a long swivel spout placed above for clearance. Several metal shims make the joints water-tight. Valves are fast acting. All designs are graceful, practical, decorative. Other styles similar to these are now ready.

Never before have mixing faucets of equal beauty and utility been offered at modest costs. Again Kohler Co. shows progressive plumbing contractors the way to greater volume and better jobs. In any installation, Kohler fixtures deserve Kohler fittings. . . . Kohler Co. *Founded* 1873. Kohler, Wis.—*Shipping Point*, Sheboygan, Wis.—*Branches in principal cities*. . . . Look for the Kohler trade-mark on each fixture.

WATERBORO Mixing Faucet K-8686 *has 5-inch swing spout, metal lever handles, vitreous china removable self-draining soap dish*



MADE FOR SERVICE AND PRICED FOR SALES



WAVERTON Mixing Faucet K-8688 *has 5-inch swing spout, metal lever handles. Can be furnished with renewable seats.*

PERRY Mixing Faucet K-8670 *has two compression valves, 6-inch or 9-inch swing spout, renewable seats, vitreous china removable self-draining soap dish. Also available with hose and spray.*

WALDEN Mixing Faucet K-8684 *has third water supply, 5-inch swing spout, renewable seats, metal lever indexed handles, vitreous china removable self-draining soap dish.*

NEVILLE Mixing Faucet K-8667 *has three compression valves, 6-inch or 9-inch swing spout, transfer valve, renewable seats, vitreous china self-draining soap dish. With or without hose and spray.*

KOHLER OF KOHLER

PLUMBING FIXTURES

Right now, you can sell MOIST AIR

There's no off season for business with the ingenious new Doherty-Brehm Humidifying Radiator

Retails at $150 to $225, f. o. b. factory, installation extra, in handsome metal cabinet. Supplied also in beautiful period wood cabinet. Or for recessing into wall. Types and sizes for any building heated by steam, hot water, or vapor. Water fed in at the top spreads out over the horizontal first section, the overflow going down and spreading out over the second section, and so on until the last section is reached and a drain carries away the small unevaporated surplus.

YOU have heard about the new Doherty-Brehm Humidifying Radiator. Have you fully recognized the business opportunity that it offers you *now* . . . just when you need it?

It's an ingenious, simple, effective new device that gives Moist Air (correct humidity) with any radiator heating system . . . steam, hot water, or vapor. You can install it as easily as you install an ordinary radiator. *One humidifies the average home.* And it heats while it humidifies. Every home with radiator heating has been waiting for it; everyone will be interested the minute you tell them about it.

No need to wait for an active building market

Don't delay. Get in on this virgin field for sales. No need to wait until some one builds a house. There are an estimated 9,000,000 homes with radiator heating in the United States, and every one is a prospect. You can sell it today, for houses already up. There's no off-season. It can be sold and installed winter and summer, spring and fall. Now's the best time of all, for people are just beginning to feel the discomfort and danger of colds that the dry, overheated air in their homes brings.

Often opens the door to complete modernizing jobs

In itself, it's a business builder that, worked hard, brings in hundreds of dollars worth of new business. And it gives the best possible entry to homes where other heating and plumbing improvements are needed. Often, it opens the door to complete modernizing jobs.

Easy payments on the **CRANE** *Budget Plan*

The Doherty-Brehm Radiator Humidifier is sold by **CRANE** only through dependable heating and plumbing contractors. You can install it under *the* **CRANE** *Budget Plan for only 10% down, the balance monthly.* Every heating and plumbing contractor should have complete specifications, installation information, and selling data.

DOHERTY-BREHM

HUMIDIFIER

SOLD BY

CRANE

Mail the coupon for this book

DOHERTY-BREHM CO.
333 North Michigan Ave., Chicago, Ill.

Please send your booklet: "How to Sell the Doherty-Brehm Humidifier".

Name.....

Address.....

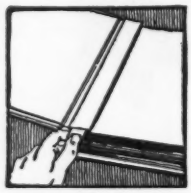
THE HANDY SPEEDLOK
Domestic Engineering Catalog Binder

Especially designed for the standardized catalog page adopted by the plumbing and heating industries

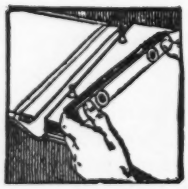
The SPEEDLOK is a quick operating catalog binder designed to fit reprints of catalog pages in "Domestic Engineering Plumbing and Heating Catalog" as well as all other catalog pages that conform to the standards adopted by the plumbing and heating industries.

Easy and speedy operation are special features of this binder. A slight pull on the concealed bar under the top cover unlocks mechanism when sheets are inserted. Equipped with bar for removing sheets when changes are made.

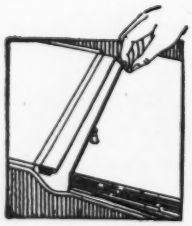
Minimum capacity 1¼ inches. By simply unscrewing extension posts capacity can be extended to 2¼ inches. Works perfectly for all requirements—either a few sheets or filled to capacity.



Covers are bound in heavy black Levant Grained Fabricoid, semi-flexible, very durable and attractive looking.



To unlock Binder—Pull out slide bar in top wing. Top cover will immediately fall back.



To lock Binder—bring top wing back over the posts—be sure posts fit in the holes in the top wing — then push in slide bar.

Separate the sheets where desired and slip sheets off the posts. Take out sheets or put in new ones as desired. These three moves take but a few seconds. Each operation is a natural one.

To increase or to decrease the capacity of the binder is a simple operation. The two posts are so constructed that they can be easily raised or lowered to meet the height requirements. Binder posts can be extended from 1¼ inches to 2¼ inches.

Plain White 16 lb. Bond Sheets Punched to Fit Speedlok Binder

Quantity	100	500	1000
Price	$1.00	$3.00	$5.50

Prices for larger quantities quoted on application.

For Plumbing and Heating Contractors—

Many master plumbers and steamfitters assemble working catalogs from standardized catalog sheets filed in binders.

Domestic Engineering is in position to furnish without charge, upon request, loose sheets—which are reprints from catalog pages appearing in "Domestic Engineering Plumbing and Heating Catalog"—of several hundred manufacturers. They are standard catalog page size—10⅝ x 8½ inches — are printed on a good grade of light paper and punched according to the standard adopted by the plumbing and heating industries. These sheets fit the SPEEDLOK binder.

For Jobbers' Salesmen—

The loose-leaf system reduces to the minimum the bulk and weight of catalog material required by the salesman. Only matter actually required for selling purposes need be carried in the binder. It does away with the necessity of carrying entire catalogs, booklets and circulars of various sizes and shapes.

Salesmen using the loose-leaf system have a great advantage over men not using this equipment — to say nothing of the added convenience, time and labor-saving features.

With a modernly equipped loose-leaf binder, the salesman can present his products in a more comprehensive manner than it is possible to accomplish by the old methods. Having all his material up to date in compact form and easily available, he can show latest specifications, answer questions or quote prices more readily.

When orders for binders are accompanied by requests for catalog reprints the binders will be equipped with the sheets desired and shipped complete.

Write for full details regarding loose sheets and binders.

Price of binder—$3.00. Prices on quantities on application.

DOMESTIC ENGINEERING

1900 Prairie Avenue *(Catalog Department)* **Chicago, Illinois**

A Message to The Plumber Who Would Like to Do

HIMSELF

A Business Favor

A simple little business favor to yourself that costs nothing, and takes but a moment of your time.

You'd do it for your friends—for your customers—without the least hesitation. Glad of the opportunity.

Now—do it for yourself!

Because—others who have done it have found it to be a stepping stone to more sales.

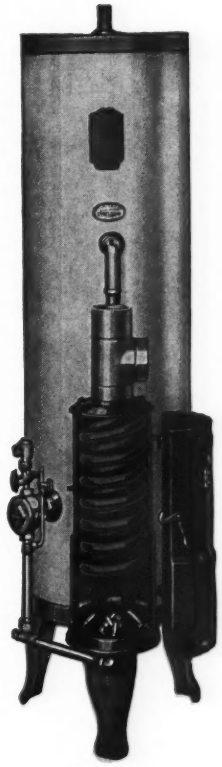
Because—others report that it has led them to the gaining of bigger reputation in their community, with a consequent increase of business.

Because—others have discovered that it helped them to a means of making their customers a definite, unified part of their sales force.

Advantages of this nature are what every wide-awake plumber wants. Have them—now—by doing yourself this simple business favor that can be told in five short words—

"Write for the Hotstream details!"

THE HOTSTREAM HEATER CO.
"Makers of Heaters that Heat"
CLEVELAND, OHIO



No. 20 SA
List Price, $66
Complete

EVERYTHING FAVORS THE HOTSTREAM

Times, Conditions, Features and Price make the Hotstream Heater the best bet for heater sales this Fall. And the Triple Guarantee (engineered-in) builds good will that brings many other sales.

HOTSTREAM
AUTOMATIC STORAGE
HEATERS

SPANG
WELDED STEEL PIPE

Every Piece Hydraulically Tested

SOUND SPECIFICATION

The name "Spang" on your heating and plumbing pipe requisitions is the soundest guarantee for long-lasting service and satisfaction you can possibly obtain. Every length is backed by the skill and care of America's longest established pipe mill where pipe making has been a mastercraft for over half a century.

Every piece pressure tested—cleanly threaded—easy to cut and safe to bend . . . these are the outstanding qualifications that make "Spang" a preferred brand among plumbing and heating contractors everywhere.

SPANG, CHALFANT & CO., INC.

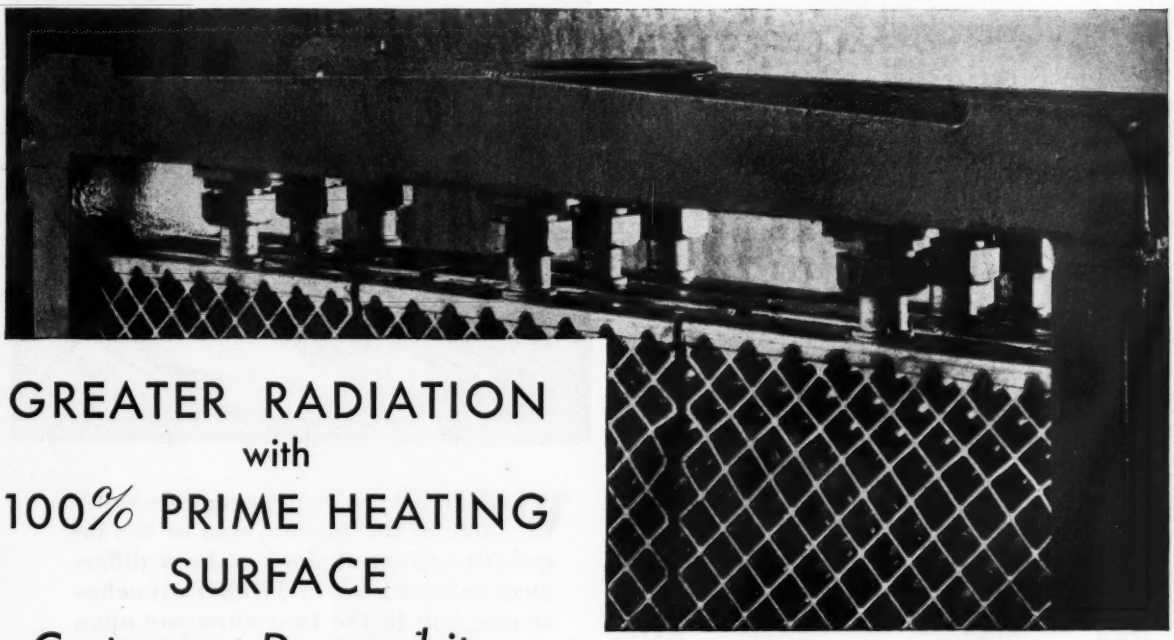
General Offices: CLARK BUILDING, PITTSBURGH, PA.

Sales Offices: CHICAGO, ILL. NEW YORK, N. Y. ST. LOUIS, MO. PITTSBURGH, PA. TULSA, OKLA. LOS ANGELES, CAL.
Welded Mills: ETNA, PENNA. SHARPSBURG, PENNA. *Seamless Mills:* AMBRIDGE, PENNA.

SPANG
WELDED STEEL PIPE

SPANG
WELDED STEEL PIPE

MULTICELL



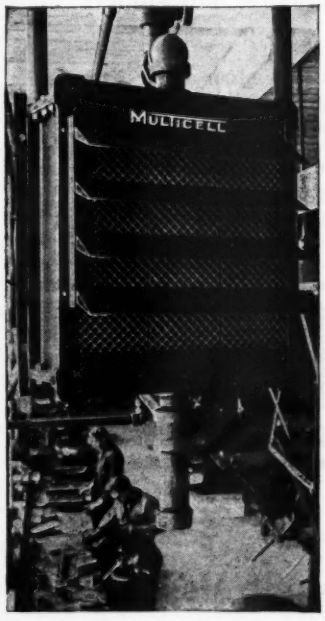
GREATER RADIATION with 100% PRIME HEATING SURFACE

Customers *Demand* it... MULTICELL Unit Heaters *Give* it...

Multicell engineers have successfully applied the age-old process of electrical deposition in producing the only unit heater in the world

—that is constructed with one-piece, seamless, pure copper sections,

—that actually presents 100% prime heating surface.



Multicell Unit Heaters are built in 3 sizes—all easy and convenient to install for economical and uninterrupted Heating in Factories, Warehouses, Garages, Railroads, Shops, Mills, Airport Hangars, Churches, Auditoriums, etc.

These exclusive features alone result in greater heat transmission with minimum area, weight and resistance to flow of air.

The Multicell leak-proof guarantee is proof of the many features in Multicell construction that make it an outstanding contribution towards permanent, inexpensive heating, simple installations and higher standards of heating efficiency.

Get the facts from the story that only Multicell can tell. The coupon is for your convenience.

MULTICELL RADIATOR CORPORATION

General Offices and Factory

LOCKPORT, N. Y.

MULTICELL RADIATOR CORP.
Lockport, N. Y.

Please send complete information and "The Story That Only Multicell Can Tell."

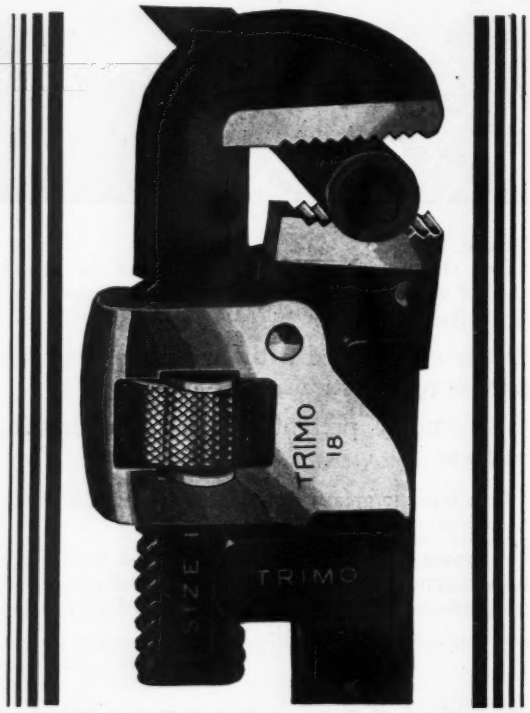
Name _____

Address _____

A Set of Fine Wrenches

- - - you can't get away from the fact that they help

TRIMO



WHETHER you're figuring it from the angle of the journeyman or the inquisitive client, it does make a difference to have a set of TRIMO wrenches staring you in the face when you open the tool kit.

Pipe wrenches are the tools of the plumber's trade, and when they are obviously good tools, they are a real promise of good work. Some plumbers have attached so much importance to this that they have had us make a special set of wrenches handsomely chromium plated.

TRIMO quality doesn't stop with fine finish. Strength and long wear are built into every all-steel TRIMO and ability to get on and off the pipe quickly and cleanly, without slipping or gouging.

ALL STEEL TRIMO PIPE WRENCH

Handle drop forged - - - not cast

Made by Trimont Mfg. Co., Roxbury (Boston), Mass.

He Took Up the Draftsman's Pencil to Battle Constipation

The daily output of a lathe operator drops. A child grows listless and inattentive as the school day drags into afternoon. An office worker slumps idly at his desk, neglecting the work before him.

The boundless energy that drove a business genius to the top rung of the ladder, slips silently away, leaving only a dull clod of a mind and body.

Yet doctors tell us that constipation is really nothing but a habit—or rather the lack of one. It is a chronic disorder, of millions, induced by irregular evacuation during youth.

The Clow Soldier of Sanitation took up the draftsman's pencil to fight this enemy of modern man and industry.

His first attack was for the coming generation. It resulted in a closet bowl, efficiently designed to make evacuation easier and more certain for school children.

For many years careless designers had been inflicting high bowls upon children in school toilet rooms.

The seat of the Clow Bowl was lowered, 2 inches closer to the floor. The position of the child is natural, with knees high and stomach muscles relaxed. Thus by making evacuation easier, regularity is made more of a habit.

Following this first bowl have come others on the same idea to help grown-ups in all walks of life. And the Soldiers of Sanitation score another important victory in their battle against uncleanliness, pollution, ill-health and inefficiency.

The Clow Soldier of Sanitation is a specialist on the acute problems of sanitation that confront every builder of a school, hospital, industrial plant or other public building. At his finger tips is the accrued experience of Clow's 52 years experience—at his back the complete line of fixtures to meet every mass plumbing need. Call him in. This is Frank O. Tinthoff, Peoria, Ill.—Southern Illinois Territory.

CLOW

CHICAGO

PREFERRED FOR EXACTING PLUMBING SINCE 1878

Consult your architect

SPECIAL NOTICE

to

Plumbing and Heating Contractors

You can secure without charge, upon request, catalog sheets of any or all of the manufacturers listed below for use in loose-leaf binder.

These sheets are reprints of pages appearing in "Domestic Engineering Plumbing and Heating Catalog." They conform to the standards adopted by the plumbing and heating industries as to page size, punching and weight of stock. If interested, write Domestic Engineering, 1900 Prairie Avenue, Chicago, on your letterhead giving the names of the concerns whose loose sheets you desire.

Domestic Engineering handles the Speedlok binder which is especially designed to hold standardized sheets. The price of the binder is $3.00.

Abendroth Bros. ..... Port Chester, N. Y.
Acheson Mfg. Co. ..... Rankin, Pa.
Acme Asbestos Covering & Flooring Co ..... Chicago, Ill.
Acme Frost Proof Closet Mfg. Co ..... Baltimore, Md.
Acme Refining Co., The ..... Cleveland, Ohio
Acme Shower Curtain Co ..... Chicago, Ill.
Alamo Heater Co. ..... Chicago, Ill.
Alberene Stone Co ..... New York City
Alliance Tank Co ..... Alliance, Ohio
American Brass Co ..... Waterbury, Conn.
American Manganese Bronze Co ..... Holmesburg, Pa.
American Pipe Tool Co ..... Chicago, Ill.
American Radiator Co. ..... New York City
American Steam Pump Co ..... Battle Creek, Mich.
American Valve & Enameling Corp ..... Indianapolis, Ind.
Armstrong Bros. Tool Co ..... Chicago, Ill.
Armstrong Mfg. Co ..... Bridgeport, Conn.
Atchison Specialty Mfg. Co ..... Atchison, Kans.
Atlas Brass Foundry Co. ..... Columbus, Ohio
Automatic Gas Steam Radiator Co ..... Pittsburgh, Pa.
Autovent Fan & Blower Co ..... Chicago, Ill.

Badger & Sons Co., E. B. ..... Boston, Mass.
Ballantine, B. D ..... Fitchburg, Mass.
Barnes Tool Co., Inc., The ..... New Haven, Conn.
Barrett Mfg. Co., James ..... Boston, Mass.
Bay Ridge Specialty Co., Inc ..... Trenton, N. J.
Bead Chain Mfg. Co ..... Bridgeport, Conn.
Beaton & Cadwell Mfg. Co., The ..... New Britain, Conn.
Beaton & Corbin Mfg. Co., The ..... Southington, Conn.
Beilman Water Heater Co., Inc., The ..... Buffalo, N. Y.
Bell & Gossett Co. ..... Chicago, Ill.
Beneke Mfg. Co ..... Chicago, Ill.
Benson Co., Inc., Alex R ..... Hudson, N. Y.
Bignall Co., The ..... Medina, N. Y.
Blue Seal Chemical Co ..... Roselle, N. J.
Boosey Mfg. Co., Norman ..... Detroit, Mich.
Borden Co ..... Warren, Ohio
Bowlus Mfg. Co., The ..... Springfield, Ohio
Boyle & Co., Inc., C. A ..... Chicago, Ill.
Boynton Furnace Co ..... New York City
Bradley Washfountain Co ..... Milwaukee, Wis.
Brunswick-Kroeschell Company ..... Chicago, Ill.
Buckeye Pump & Mfg. Co ..... Columbus, Ohio
Buffalo Forge Co ..... Buffalo, N. Y.
Buffalo Meter Co ..... Buffalo, N. Y.
Bullard Specialty Co. ..... Tiffin, Ohio
Burnham Boiler Corp ..... Irvington, N. Y.
Butler Mfg. Co ..... Minneapolis, Minn.
Butler, Thos. F ..... Lorain, Ohio
Butt Mfg. Co., H. G. ..... Boston, Mass.

Camden Pottery Co ..... Camden, N. J.
Capitol Brass Works ..... Detroit, Mich.
Carty & Moore Engineering Co., Inc ..... Detroit, Mich.
Case & Son Mfg. Co., W. A ..... Buffalo, N. Y.
Cash Valve Mfg. Corp., A. W. ..... Decatur, Ill.
Celina Mfg. Co ..... Celina, Ohio
Central Foundry Co ..... New York City
Central Radiator Co ..... New York City
Central Specialty Co ..... Detroit, Mich.
Chamberlain Co., The ..... Pittsburgh, Pa.
Chapman Valve Mfg. Co., The ..... Indian Orchard, Mass.
Chicago Faucet Co., The ..... Chicago, Ill.
Chicago Flexible Shaft Co. (Sprinkler Division) ..... Chicago, Ill.
Chicago Granitine Mfg. Co ..... Chicago, Ill.
Chicago Pump Co ..... Chicago, Ill.
City Brass Corp ..... New York City
Clearflow Valves ..... Berkeley, Calif.
Cleveland Brass Mfg. Co., The ..... Cleveland, Ohio
Cleveland Heater Co ..... Cleveland, Ohio
Coco Brothers, Inc. ..... New York City
Columbia Radiator Co ..... McKeesport, Pa.
Comet Radiator Co ..... Philadelphia, Pa.
Commonwealth Brass Corp ..... Detroit, Mich.
Compound Injector & Specialty Co ..... Chicago, Ill.
Conemaugh Iron Works ..... Latrobe, Pa.
Connors Paint Mfg. Co., Wm., The ..... Troy, N. Y.

Conover Co. ..... Chicago, Ill.
Corcoran Mfg. Co ..... Cincinnati, Ohio
Covert Company, H. W ..... New York City
Crampton-Farley Brass Co ..... Kansas City, Mo.
Crist & Schilken Co ..... Pittsburgh, Pa.
Crown Die & Tool Co. ..... Chicago, Ill.
Curtin Valve Co., A. F ..... Medford, Mass.
Curtis & Curtis Co., The ..... Bridgeport, Conn.

Dahlquist Mfg. Co ..... South Boston, Mass.
Dargent, Charles ..... Brooklyn, N. Y.
Dart Mfg. Co., E. M ..... Providence, R. I.
Davis Engineering Corp ..... New York City
De-Bar Co ..... Brooklyn, N. Y.
Decatur Pump Co ..... Decatur, Ill.
Dececo Co., The ..... Boston, Mass.
Delaware Tool Co ..... Wilmington, Del.
d'Este Co., Julian ..... Boston, Mass.
Detroit Lubricator Co ..... Detroit, Mich.
Dick Brothers, Inc ..... Reading, Pa.
Dixie Flashing Co., Inc. ..... Birmingham, Ala.
Dole Valve Company ..... Chicago, Ill.
Donnelly Mfg. Co ..... Malden, Mass.
Drackett Chemical Co. ..... Cincinnati, Ohio
Dunham Co ..... Berea, Ohio
Dunkirk Radiator Corp ..... Dunkirk, N. Y.
Duo-Tor Mfg. Co ..... Dayton, Ohio
Duriron Co., Inc. ..... Dayton, Ohio
Duro Wood Products, Inc ..... Capac, Mich.

Eagle-Picher Lead Co., The ..... Cincinnati, Ohio
Eastern Foundry Co., The ..... Boyertown, Pa.
Ebinger Sanitary Mfg. Co., D. A ..... Columbus, Ohio
Economy Heater Co ..... Chicago, Ill.
Economy Pumping Machinery Co ..... Chicago, Ill.
Eljer Co. ..... Ford City, Pa.
Elkay Mfg. Co ..... Chicago, Ill.
Elkhart Foundry & Machine Co ..... Elkhart, Ind.
Elkhart Iron Works ..... Elkhart, Ind.
Emery Industries, Inc. ..... Cincinnati, Ohio
Enterprise Brass Works ..... Muskegon, Mich.
Erie Tool Works, The ..... Erie, Pa.
Estabrook's Sons Co., R ..... South Boston, Mass.
Ever-Ready Gas Heater Valve Co ..... Detroit, Mich.
Excel Metal Cabinet Co. ..... Jamestown, N. Y.
Excelsior Leather Washer Mfg. Co ..... Rockford, Ill.
Excelso Products Corp ..... Buffalo, N. Y.
Exeter Brass Works ..... Exeter, N. H.

Fairbanks Engineering Co ..... Worcester, Mass.
Federal Radiator Co. ..... Zanesville, Ohio
Federated Laboratories, Inc. ..... New York City
Fischer Spring Co., Chas ..... Brooklyn, N. Y.
Flagg & Co., Inc., Stanley G ..... Philadelphia, Pa.
Florence Stove Co ..... Boston, Mass.

Gas-O-Gen Corp ..... Chicago, Ill.
General Ceramics Co ..... New York City
Gerard Mfg. Co ..... Dickson City, Pa.
Germain Mfg. Co ..... Saginaw, Mich.
Gerstein & Cooper ..... South Boston, Mass.
Gerstein & Sons, H ..... South Boston, Mass.
Gleockle, Jr., A. F ..... Rochester, N. Y.
Globe Brass Mfg. Co ..... Cleveland, Ohio
Gorton Heating Corp. ..... Garwood, N. J.
Goulds Pumps, Inc ..... Seneca Falls, N. Y.
Grabler Mfg. Co ..... Cleveland, Ohio
Grand Haven Brass Foundry ..... Grand Haven, Mich.
Grinnell Co., Inc ..... Providence, R. I.

Haas Co., Philip ..... Dayton, Ohio
Hamburg Boiler Works, Inc ..... Hamburg, Pa.
Hanson Scale Co ..... Chicago, Ill.
Hause Mfg. Co., Chas. F. ..... Omaha, Nebr.
Hayes Mfg. Co. ..... Paterson, N. J.
Hays Mfg. Co ..... Erie, Pa.
Healey Brass Foundry Co., Peter ..... Evansville, Ind.
Healy-Ruff Company ..... St. Paul, Minn.
Heap & Sons, Wm. ..... Grand Haven, Mich.

Hedges & Bro.....Newark, N. J.
Heller Bros. Co.....Newark, N. J.
Hercules Chemical Co.....New York City
Hetzel Roofing Products Co.....Newark, N. J.
Hindley Mfg. Co.....Valley Falls, R. I.
Hollands Mfg. Co.....Erie, Pa.
Holyoke Heater Co.....Holyoke, Mass.
Hotstream Heater Co.....Cleveland, Ohio
Hudson Brass Works, Inc.....Brooklyn, N. Y.
Hunt Co., H. W.....Reading, Mass.

I-X-L Pump & Mfg. Co., Inc.....Philadelphia, Pa.
Ideal Furnace Co.....Detroit, Mich.
Ideal Pump Co.....Detroit, Mich.
Illinois Engineering Company.....Chicago, Ill.
Inland Iron Works, Inc.....Joliet, Ill.

J. R. S. Specialties Mfg. Co., Inc.....Patchogue, N. Y.
Janette Mfg. Co.....Chicago, Ill.
Jenkins Brothers.....New York City
Jenkins Mfg. Co.....Bloomfield, N. J.
Johns-Manville Corp.....New York City
Johnson-Washburn Co.....Boston, Mass.
Jones Hollow Ware Co.....Baltimore, Md.
Juvenile Wood Products, Inc.....Fort Wayne, Ind.

Kahn & Co., H.....Philadelphia, Pa.
Kainer & Co.....Chicago, Ill.
Kaustine Co., Inc.....Perry, N. Y.
Keasbey & Mattison Co.....Ambler, Pa.
Keeney Mfg. Co., The.....Newington, Conn.
Kellogg Mfg. Co.....Rochester, N. Y.
Kemoshyne Products, Inc.....Philadelphia, Pa.
Kemp Mfg. Co., C. M.....Baltimore, Md.
Kennedy Valve Mfg. Co.....Elmira, N. Y.
Kent Co., Inc., The.....Rome, N. Y.
Ketcham Mfg. Corp., G. M.....Brooklyn, N. Y.
Kewanee Boiler Corp.....Kewanee, Ill.
Keystone Brass Works.....Erie, Pa.
Keystone Pottery Co.....Trenton, N. J.
Kieley & Mueller, Inc.....New York City
King Union Co., Inc.....Hillsgrove, R. I.
Kitson Co.....Philadelphia, Pa.
Kleinert Rubber Co., I. B.....New York City
Knott Mfg. Co.....Tell City, Ind.
Kuhns Brothers Co.....Dayton, Ohio
Kupferle Foundry Co., John C.....St. Louis, Mo.

Lavelle Rubber Co.....Chicago, Ill.
Lawson Co., The F. H.....Cincinnati, Ohio
Lawson Mfg. Co.....Pittsburgh, Pa.
Leavitt Machine Co.....Orange, Mass.
Lee Brothers Foundry Co.....Anniston, Ala.
Lehman Sprayshield Co.....Philadelphia, Pa.
Lehnert & Co.....New York City
Leonard-Rooke Co.....Providence, R. I.
Lewis Sanitary Tool Co.....Quincy, Mass.
Liquid Veneer Corp.....Buffalo, N. Y.
Lissberger & Son, Inc., Marks.....Long Island City, N. Y.
Little Giant Mfg. Co.....Minneapolis, Minn.
Locke, Stevens & Sanitas, Inc.....Boston, Mass.
Lowe Mfg. Co.....Detroit, Mich.
Lucke, Wm. B.....Wilmette, Ill.
Lytton Mfg. Corp.....Franklin, Va.

McCaffrey Mfg. Co.....Chicago, Ill.
McCoy Mfg. Co., Inc.....New York City
McDonnell & Miller.....Chicago, Ill.
McGurrin Supply Co.....Grand Rapids, Mich.
Malleable Iron Fittings Co.....Branford, Conn.
Marsh & Co., James P.....Chicago, Ill.
Martin & Sons, H. P.....Owensboro, Ky.
Marvel Machine & Brass Works.....Cleveland, Ohio
Meer Made Products.....Chicago, Ill.
Meneley-Diederich Co., Inc.....Los Angeles, Cal.
Michigan Pipe Co.....Bay City, Mich.
Milford Iron Foundry.....Milford, Mass.
Miller Co., Chas. A.....Sturgis, Mich.
Milwaukee Stamping Co.....West Allis, Wis.
Milwaukee Valve Co.....Milwaukee, Wis.
Minneapolis-Honeywell Regulator Co.....Minneapolis, Minn.
Misener Mfg. Co., Inc.....Syracuse, N. Y.
Modern Iron Works.....Quincy, Ill.
Modine Mfg. Co.....Racine, Wis.
Mohawk Septic Tank Co.....Schenectady, N. Y.
Molby Boiler Co., Inc.....New York City
Moore, F. J.....Minneapolis, Minn.
Morton Mfg. Co.....Chicago, Ill.
Muller, Edward.....North Bergen, N. J.
Multicell Radiator Corp.....Lockport, N. Y.

Nash Engineering Co.....South Norwalk, Conn.
Nason Mfg. Co.....New York City
National Pipe Bending Co.....New Haven, Conn.
Neptune Meter Co.....New York City
Newark Brass Works.....Newark, N. J.
New Britain Machine Co.....New Britain, Conn.
Newbury Mfg. Co.....Monroe, N. Y.
Newbury & Son, Jay H.....Goshen, N. Y.
New York Air Valve Corp.....New York City
New York Blower Co.....Chicago, Ill.
New York Brass Foundry Co.....New York City
Northern Indiana Brass Co.....Elkhart, Ind.
Northwestern Chemical Co., The.....Marietta, Ohio
Nustone Products Corp.....Union City, N. J.
Nye Tool & Machine Works.....Chicago, Ill.

O-E Specialty Mfg. Corp.....Milwaukee, Wis.
Ohio Brass Co.....Mansfield, Ohio
Ohio Heater Co., The.....Columbus, Ohio
Olsen, H. T.....New York City
Oster Mfg. Co.....Cleveland, Ohio

Paine Co.....Chicago, Ill.
Para Rubber Co.....Newark, N. J.
Paradine Mfg. Co.....Erie, Pa.
Peerless Machine Co.....Racine, Wis.
Peerless Shower Door Co.....Brooklyn, N. Y.
Penn Engineering Co.....Reading, Pa.
Penn Engineering Co., The.....Philadelphia, Pa.
Perfect Tank & Seat Co.....Syracuse, N. Y.
Perfection Stove Co.....Cleveland, Ohio
Phoenix Brass Fittings Corp.....Irvington, N. J.
Pipe-Saver Corp. of America.....Carthage, N. Y.
Pittsburg Water Heater Co.....Pittsburgh, Pa.
Plomb Tool Co.....Los Angeles, Cal.
Polygon Products Co.....Boston, Mass.
Portland Iron Works.....Portland, Ore.
Powers Regulator Co.....Chicago, Ill.

Quick Products, Inc.....Newark, N. J.

Radiator Specialty Co.....Charlotte, N. C.
Rawplug Co., Inc., The.....New York City
Redlon, O. M.....Bath, Maine
Reed Mfg. Co.....Erie, Pa.
Reinhardt Mfg. Co., Edwin G.....Cincinnati, Ohio
Rhode Island Fittings Co.....Providence, R. I.
Richards Corp.....Pittsburgh, Pa.
Richardson & Boynton Co.....New York, N. Y.
Richmond Foundry & Mfg. Co., Inc.....Richmond, Va.
Ridge Tool Co.....Elyria, Ohio
Riverside Boiler Works, Inc.....Cambridge, Mass.
Riverside Foundry & Galvanizing Co.....Kalamazoo, Mich.
Robbins, Gamwell & Co.....Pittsfield, Mass.
Robertshaw Thermostat Co.....Youngwood, Pa.
Robertson Co., H. E.....Chicago, Ill.
Rochester Circulator Co.....Rochester, N. Y.
Rock Island Mfg. Co.....Rock Island, Ill.
Rockford Brass Works.....Rockford, Ill.
Royal Brass Mfg. Co., The.....Cleveland, Ohio
Royal Textile & Mfg. Co.....Detroit, Mich.
Rumsey Pump Co., Ltd.....Seneca Falls, N. Y.
Russell Mfg. Co., Inc., John M.....Naugatuck, Conn.
Russell & Co., W. A.....New York City
Ryan Co., B.....New York City

S. E. T. Valve & Hydrant Co.....New York, N. Y.
Sall Mountain Co.....Chicago, Ill.
Sands Mfg. Co.....Cleveland, Ohio
San-Equip, Inc.....Syracuse, N. Y.
Sanitary-Dash Corp.....New York City
Sarco Co., Inc.....New York City
Saunders' Sons, Inc., D.....Yonkers, N. Y.
Sawo Mfg. Co.....Chicago, Ill.
Scaife & Sons Co., Wm. B.....Oakmont, Pa.
Scientific Heater Co.....Cleveland, Ohio
Seco Incinerator Co.....Kansas City, Mo.
Seehausen, Wehrs & Co.....Chicago, Ill.
Self-Cleaning Strainer Co.....Chicago, Ill.
Selfridge-Norton Mfg. Co.....Cleveland, Ohio
Semler Co.....Jeannette, Pa.
Sherwood Brass Works.....Detroit, Mich.
Silver King Mfg. Co.....Philadelphia, Pa.
Simonds Saw & Steel Co.....Fitchburg, Mass.
Simplex Boiler Stand Co.....Brooklyn, N. Y.
Simplex Mfg. Co.....Chicago, Ill.
Smith & Wesson, Inc.....Springfield, Mass.
Smooth-On Mfg. Co.....Jersey City, N. J.
Spencer Regulator Co.....Salem, Mass.
Stack Heater Co.....Boston, Mass.
Standard Asbestos Mfg. Co.....Chicago, Ill.
Standard Brass Mfg. Co.....Utica, N. Y.
Standard Elsmere Granite Co.....Chicago, Ill.
Standard Tank & Seat Co.....Camden, N. J.
Sterling Faucet Co.....Newcomerstown, Ohio
Stoll, Chas. J.....New York City
Stow Mfg. Co., Inc.....Binghamton, N. Y.
Stringer Brothers Co.....Chicago, Ill.
Structural Slate Co.....Pen Argyl, Pa.
Stuart & Co., D. A.....Chicago, Ill.
Swett Iron Works, A. L.....Medina, N. Y.

Taco Heaters, Inc.....New York City
Taylor Co., Halsey W., The.....Warren, Ohio
Teck Manufacturing Co.....Chicago, Ill.
Teekorator, Inc.....Rochester, N. Y.
Tillery's Little Janitor Clock Co.....Newark, N. J.
Time-O-Stat Controls Co.....Elkhart, Ind.
Titchener & Co., E. H.....Binghamton, N. Y.
Toledo Pipe Threading Machine Co.....Toledo, Ohio
Trageser Steam Copper Works, John.....Maspeth, N. Y.
Trenton Brass & Machine Co.....Trenton, N. J.
Trimont Mfg. Co., Inc.....Boston, Mass.
Tryco Products, Inc.....Westfield, Mass.

U. S. Rubber Company.....Cleveland, Ohio
Utica Radiator Corp.....Utica, N. Y.
Utility Laboratory, Inc.....Brooklyn, N. Y.

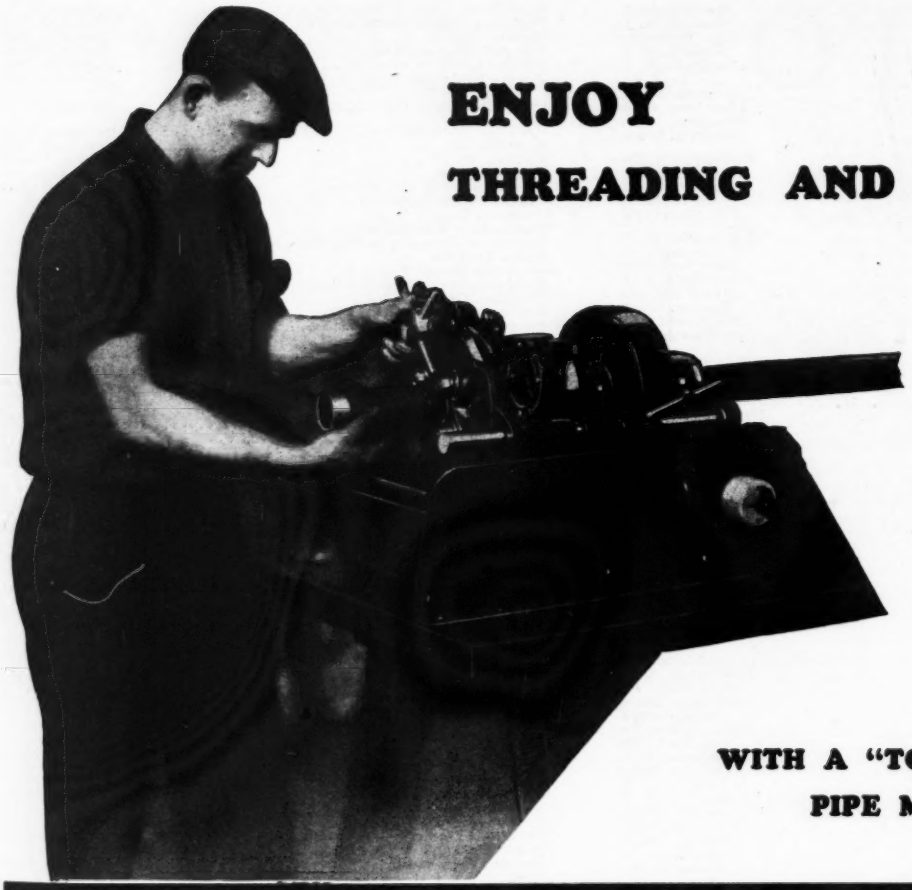
Van Arnam Mfg. Co.....Fort Wayne, Ind.
Vanderman Mfg. Co.....Willimantic, Conn.
Vinco Co., Inc.....New York City
Vitreous Enameling & Stamping Co., Inc.....New York City
Vogel Co., Joseph A.....Wilmington, Del.
Vulcatex, Inc.....Chicago, Ill.

Wade Iron Sanitary Mfg. Co.....Chicago, Ill.
Walker Dishwasher Corp.....Chicago, Ill.
Wall Mfg. Supply Co., P.....Pittsburgh, Pa.
Walworth Company.....Boston, Mass.
Ware Coupling & Nipple Co.....Ware, Mass.
Warnock Manufacturing Co.....Worcester, Mass.
Warren Electric Appliance Co.....Warren, Pa.
Washington Metal Products Co.....Washington C. H., Ohio
Watts Regulator Co.....Lawrence, Mass.
Weis Mfg. Co., Inc., Henry.....Elkhart, Ind.
Wesley Co., Chas.....Chicago, Ill.
Wessels & Sons, D. D.....Detroit, Mich.
Western Wire Products Co.....St. Louis, Mo.
Westinghouse Electric & Mfg. Co.....East Pittsburgh, Pa.
Wheeling Machine Products Co.....Wheeling, W. Va.
Whitlock Coil Pipe Co.....Hartford, Conn.
White Mfg. Co.....Newark, N. J.
Wilbur & Williams Co.....Boston, Mass.
Wilks Mfg. Co., S.....Chicago, Ill.
Williams & Co., J. H.....Buffalo, N. Y.
Wood Mfg. Co., John.....Conshohocken, Pa.
Worcester Brush & Scraper Co.....Worcester, Mass.

"X" Laboratories.....New York City

Yeomans Brothers Co.....Chicago, Ill.
Yost Mfg. Co.....Meadville, Pa.

Zurn Mfg. Co., J. A.....Erie, Pa.



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DOMESTIC
ENGINEERING
NOVEMBER 29, 1930

Our Industry

With signs of better business multiplying on both sides of the road ahead, many business men in the plumbing and heating industry are still glancing uncertainly around wonderingwhat road to follow.

♦ ♦

Take some of these signs by which business can now be guided.

♦ ♦

Thirteen months of slackness leaves us:

—with a practically unchanged wage and salary scale

—with the wants of a few more million persons added to the needs of the 120,000,000 whose requirements for food, clothing, shelter and sanitation make up a market of almost unbelievable size

—with stocks and supplies so finely adjusted to curtailed buying that any small change in demand will have an up-lifting influence far beyond the actual volume

—with most of our extravagances eliminated and many of our economies at work

—with everyone agreeing that a courageous business policy set in motion today will put its user far ahead of his competitor a year from now.

♦ ♦

Every drop in business shakes from their pedestals those companies which have been softened by good times.

♦ ♦

A few months from now the plumbing and heating industry will find itself with new men among its leaders.

♦ ♦

Some small companies will have become enlarged.

♦ ♦

Some large companies will have dropped back to an inferior rating.

♦ ♦

The work being done today to build on courage and confidence is determining the results which all will see in just a few months ahead.

♦ ♦

It is easy to advise but harder to take advice.

♦ ♦

And if the one who is giving advice does not act on it himself, he cannot expect to be taken seriously.

♦ ♦

So the editor who advises others what to do should do it himself.

♦ ♦

DOMESTIC ENGINEERING has and is following the same business program it encourages its readers to use.

♦ ♦

We have met the increased needs of our subscribers by giving them more rather than less editorial service.

♦ ♦

This department has been strengthened so that is could produce a better product in the form of a more practical, more readable and more useable business paper.

♦ ♦

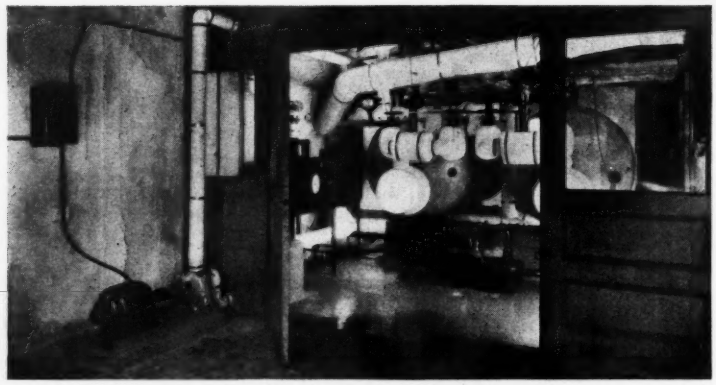
To do so, we have had to assume the expense of a 10 per cent increase in number of editorial pages and an even larger increase in hard work and good management so that our readers could use this publication to help their business.

♦ ♦

We saw 1930 as an opportunity—not an obstacle.

◆

"There is room and great room, with the brightest of prospects for the dealer who has the intelligence and the courage to meet modern conditions with modern selling."
—R. J. Hamilton.



The condensate recovery system installed in the basement of the Union Electric Light and Power Company office building

Condensate from Heating System Supplies Hot Water

By R. M. McQUITTY

WHY should a building throw away pure, soft, hot water and then pay for heating city water for building use? This is exactly what is being done in many buildings which are purchasing steam for heating purposes. This practice has been established due to the extensive growth of central station (district) steam heating. These buildings have found it more profitable to purchase steam than to generate it in their own boiler plants. The central station has found it more and more uneconomical to return the condensate to the plant, with the result that today the steam is often purchased by the customer, and the condensate discharged to the sewer on the premises.

Approximately 11 Per Cent of Original B.t.u. Value of Steam Contained in Condensate

Each pound of steam purchased (assumed at 5 lb. gage pressure, dry saturated) contains approximately 1,114 B.t.u. After the heat of vaporization is given up in the heating systems the steam becomes condensate and is discharged from the heating system returns at a temperature of approximately 160 deg. Fahr. This hot condensate still contains approximately 11.2 per cent of the original heat value of the steam.

Condensate Suitable for Hot Water Supply

The condensate that drains from the heating system is, in the majority of cases, pure distilled water, which could not be excelled by the most expensive softening and purifying treatment. It is usually hot enough to be used as hot water without being reheated, and the amount of condensate available during the heating season is usually nearly the same as requirements for hot water.

Test Installation Made in Company Office Building

In order that a complete study might be made as to the advisability of using condensate as hot water, a condensate recovery system was installed, as shown in the accompanying photograph, in the ten-story office building of the Union Electric Light and Power Company at St. Louis, Missouri. This installation is equipped with special metering and temperature recording equip-

Here is an opportunity for the contractor to show the owner who purchases steam for heating how to save on operating expenses. And how does the contractor profit? By creating good will and, more tangibly, by opening up a new field for his services.

ment and the piping is arranged so that methods of operation may be varied.

The first consideration in this study was purity of the condensate. A chemical analysis was made of both steam and condensate. This analysis showed the condensate here to be exceptionally pure, containing only .048 grains of total solids per gallon. No trace of boiler compound could be detected, in either the steam or condensate. At the time the analysis was made a special

Ten-story office building of the Union Electric Light and Power Company, in St. Louis, in which is installed the condensate recovery system. Large savings have been effected since its installation less than a year ago

study was made as to the corrosive effects the condensate might have on hot water piping. The conclusion reached was that the corrosive effect would be negligible, due to the general tendency for the condensate to be mixed with the city water.

Actual practice has demonstrated that the coating formed in the pipes due to use of hard water tends to counteract any corrosive effect of the condensate. The condensate, in turn, practically removes the usual trouble due to pipes becoming stopped up from coating deposits.

Design of Condensate Recovery System

Fig. 1 shows the design of the recovery system. This system has the special feature whereby the condensate can be either used as it is available or stored for future use. It is entirely automatic in operation. If the supply of condensate is insufficient to supply the hot water demand, cold water is heated by a thermostatically controlled steam valve. If the supply of condensate is greater than the demand for hot water, the condensate is stored for future use.

The details of operation of the system are as follows:

The condensate is collected as it drains from the heating returns in the float tank, from which it is automatically pumped into the hot water heater. An equal volume of water is forced out of the hot water heater through the hot water piping, back through the hot water returns and into the top of the storage tank. As the storage tank is being filled with hot water, cold water, which remains at the bottom, is forced out and backed up into the cold water house tank. When the storage tank becomes filled with hot water, the water being backed out becomes warm and causes a temperature control switch to stop the pump. Any excess condensate then fills the float tank and overflows to the sewer until some of the hot water is used. If the supply of condensate is insufficient, then the storage tank is emptied, after which the cold water from the house tank fills the storage tank and is supplied to the hot water heater. This lowers the temperature in the hot water storage heater and steam is admitted to the coils by the thermostatically controlled steam valve.

The use of this system also gives the building the benefit of forced circulation in the hot water piping. A lower temperature can thus be maintained in the hot water heater to supply a given average temperature throughout the hot water system.

Temperatures Maintained

The temperature of the condensate at this building varies from 100 deg. to 180 deg. Fahr. However, the extreme variations occur only when the system is first heated. The usual temperature of the condensate is approximately 150 deg. Fahr.

The temperature of the condensate will vary considerably with respect to different types of heating systems. Many of the modern systems are able to cool it as low as 100 deg., while the one-pipe gravity systems often discharge condensate as high as 200 deg. Fahr.

The thermostatically controlled steam valve is set to open if the water in the heater falls below 130 deg. Fahr. This seems to be the best point for condensate temperatures averaging 150 deg. Fahr. Provided the supply of condensate is sufficient to meet the hot water demand, a fairly constant temperature of 140 deg. Fahr. can be maintained in the hot water supply with 150 deg. Fahr. condensate. The extreme variations do not affect the temperature of the hot water supply to any great extent, due to the large amount of storage.

Danger from high temperatures in the hot water sup-

Table 1—Comparative steam consumption for water heating with and without condensate recovery system

Cubical contents of Building ..... 1,307,158 cu. ft.
Radiation connected ..... 32,041 sq. ft
Hot water requirements 2000 to 3000 gallons per day.
Size of pump used to return condensate ..... 12 G.P.M.
Storage capacity ..... 300 gallons

Month	M. Lb. Steam Required				* D.D.D.'s (Based on 70 F)		M. Pounds Hot Water Required	Cond. Available	Cond. Reclaimed as H.W.
	Bldg. Heating		Water Heating						
	1929	1930	1929	1930	1929	1930			
January	1,425	1,603	72	0	1,326	1,385	737	1,603	737
February	1,207	880	77	17	1,165	698	693	897	465
March	646	997	79	8	622	807	711	1,005	592
April	249	317	67	43	370	318	603	360	278
May	176	10	73	49	298	163	524	59	59
June	12	.....	55	42	.....	.....	462	42	42
July	.....	.....	52 (1928)	38 (1929)	.....	.....	418	38	38
Dec. (15 days)	.....	.....	79	20	.....	.....	355	699	341
Total	3,715	3,807	554	217	3,781	3,371	4,503	4,703	2,552

Saving in Steam for above period ..... 337,000 pounds
Saving in water approximately 2,552,000 lb. or ..... 36,618 cu. ft.
Percentage saving in Steam 60.8%
Percentage of Total Condensate available reclaimed 54.3%
Saving in cost of Steam and Water based on St. Louis rates $252.00
Cost of Recovery system Installed 425.00
Total Estimated saving per year 350.00

ply has been negligible in the above installation. However, this can be guarded against by installing another temperature control switch in the hot water heater. This switch should be wired in series with the other control switch and the float switch. Excessive temperatures would then cause the pump to stop, and cold water would be mixed with the hot condensate.

Savings Effected

The recovery system was first put in operation in the building December 16, 1929; therefore, a complete year's data is not yet available. The savings accomplished during nearly eight months, as compared to the previous year, are shown in Table 1.

Application to Various Types of Buildings

The recovery system is applicable to any type of building having need for hot water, provided the condensate is suitable for hot water supply.

The design as shown in Fig. 1 is applicable to any building which has a cold water house tank. In this design the pump should have sufficient capacity to reclaim the maximum amount of condensate which will be available at any time. This is especially necessary during the warmer months of the heating season when all condensate available can be used.

The amount of storage capacity required for various other installations will, of course, depend upon the nature of the hot water demand, and the condensate available. Many buildings are already equipped with a spare hot water heater. One of the heaters can then be used as a storage tank as well.

Fig. 2 shows another design of recovery system which is applicable to buildings not having a cold water house tank, or, it may be used in any case where the hot water load is fairly constant.

In this method the storage capacity required is accomplished by making the condensate float tank extra large. The condensate is pumped into the hot water heater at a constant rate as long as it is available. If the hot water demand is less than the amount being pumped in, the circulating valve is opened by the higher pressure in the system and the pump merely circulates the water in the system. Although this method requires that the pump be operating regardless of the hot water demand, as long as there is condensate available, the amount of electric current consumed by the motor is at a minimum during the time the pump is merely circulating the water in the system.

The type of circulating valve required will depend upon the type of pump used. For the comparatively low static head, the ordinary centrifugal type pump can be used. This type of pump has a characteristic whereby the horse power required is indirectly proportional to the static head. Thus, when no water is being drawn from the system and the pressure builds up this type of pump requires very little power. However, the pump cannot be allowed to churn, as the friction would finally heat the water in the pump casing, and the pump might be ruined. In order, then, for this type of pump to be operating at the maximum head, a pressure relief valve should be installed so that the pump will circulate just enough water to keep it from overheating on no load. The pressure relief valve would then replace the diaphragm valve shown in Fig. 2.

The turbine type pump, which is often used for the higher pressures, has a characteristic as to power and static head which is opposite to the centrifugal pump. The power required for this pump increases with the pressure. It is desirable, then, for this type of pump to operate against a minimum effective static head during

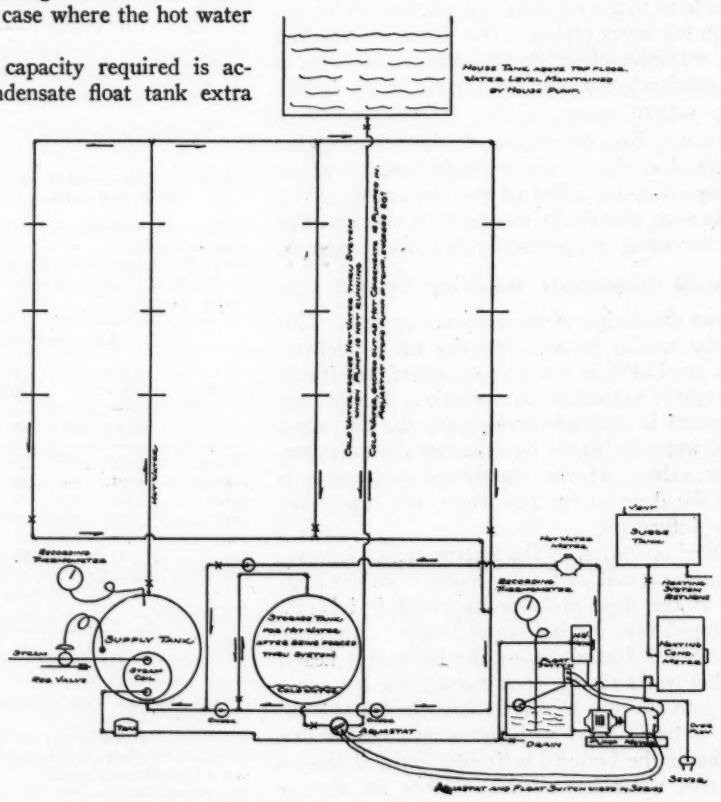


Fig. 1 — Condensate recovery system. Design for forced circulation

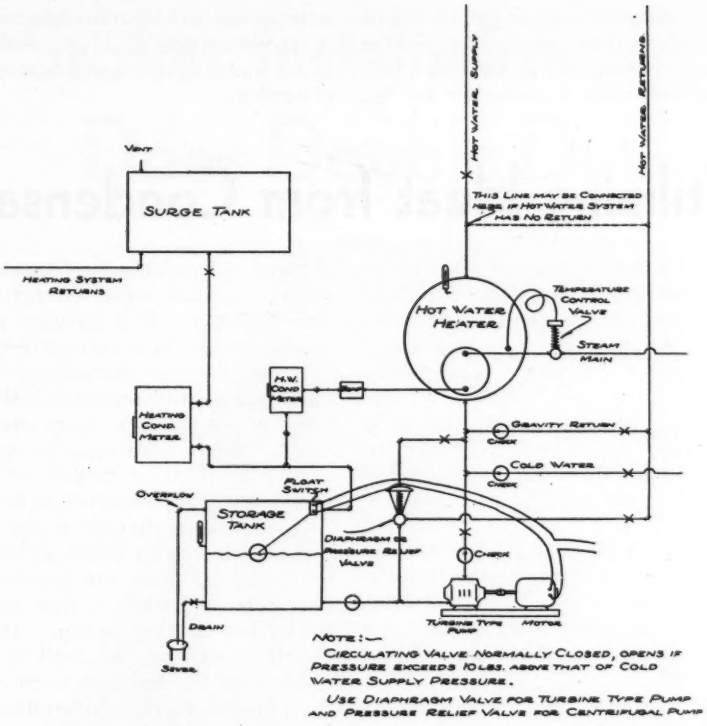


Fig. 2 — Condensate recovery system. Special design for buildings having no cold water house tank or buildings having a fairly constant hot water demand

the time when it is simply circulating the water in the system. This is accomplished with the diaphragm type valve which opens when the pressure increases. The pressure on the inlet to the pump is thus increased which reduces the effective static head.

Methods of Estimation of Savings Where Condensate Is Utilized

Since the amount of condensate available varies with the heating requirements, while hot water demand remains more or less constant during any month of the year, any estimate of savings should be made on a monthly basis.

The steam required to heat a given quantity of water per month, a part of which is supplied by condensate, may be calculated for all practical purposes from the following formula:

W = 1,000 pounds hot water required per month.

C = 1,000 pounds condensate reclaimed per month from the building heating system (assumed to be as hot as the required hot water temperature).

K = a constant = pounds water which can be heated by 1 pound of steam where condensate is not returned.

Steam required per month for water heating, if condensate $= \dfrac{W - C}{K + 1}$

M. pounds of steam is utilized.

Where water is heated from 60 degrees to 160 degrees Fahr. with steam at 5 pounds gage pressure (dry saturated), K becomes approximately 9.

The value of K may be calculated for other conditions as follows:

$$K = \frac{Q_s - Q_c X \text{ (per cent efficiency of heater)}}{Q_{w2} - Q_{w1}}$$

Where,

Q_s = B.t.u. content of 1 pound of steam.

Q_c = B.t.u. content of 1 pound of condensate as discharged from heater.

Q_{w1} = B.t.u. content of 1 pound water to be heated.

Q_{w2} = B.t.u. content of 1 pound water after being heated.

For all practical purposes K can be assumed as equal to 9 and the formula becomes:

M. pound steam required =

[(M pounds water required) — (M pounds condensate from heating system) per month] ÷ 10

A study of ten office buildings in St. Louis indicates that the annual hot water requirements are approximately equal to the condensate available. However, the condensate supply usually exceeds the demand for hot water during the coldest month of the season, and a considerable amount of condensate is therefore lost. By applying the above formula for savings to these buildings, an office building to have normal heating and hot water requirements should be able to reclaim approximately 62 per cent of all condensate available during the year.

Hotels require from three to five times as much hot water as office buildings. An estimate based on one hotel indicates that approximately 90 per cent of the condensate available could be utilized.

The study or the advisability of using condensate as hot water supply is of course limited to those buildings served by the district heating system of the Union Electric Light and Power Company, so it would not necessarily mean that the condensate from all systems would

be suitable. However, a chemical analysis can always be made which will definitely indicate whether or not the condensate in any locality is adaptable as hot water supply. Even though the condensate is unsuitable for hot water, it can still be utilized by means of the economizer. A possible saving of 11 per cent in steam consumption is certainly worth consideration of some method of utilization.

Utilizing Heat from Condensate

WHERE steam is purchased the rate of payment for heat is generally by meter. The meter may be a condensation meter which records the condensation passing from the system in lb.; or it may be a steam meter which measures the quantity of steam passing into the system.

In either case there is a charge for steam used. It is, therefore, good engineering practice to arrange the heating system so that as much of the heat furnished in the form of steam shall be utilized in the building as possible.

The condensation from a heating system usually is quite hot, its temperature varying with the kind of heating system, the weather conditions, the pressure within the radiators and other heating units, the length of travel and exposure to heat loss of the return lines, and so forth.

As a general rule, however, the temperature of the condensation is high enough to warrant the installation of a cooling coil or other type of economizer on the condensation main to extract as much heat from the condensation as possible before it goes to waste. The economizer installation invariably pays for itself sooner or later, depending somewhat on the character of the job.

For example, consider a 1,000 sq. ft. job consuming 600,000 lb. of steam per season, which is about the ordinary rate where zero weather prevails only a few days each winter, and where the heating season is from October 1, to June 1.

If the steam is furnished at 5 lb. pressure the total amount of available heat supplied to the building is nearly, but not quite, 668,000,000 B.t.u. during the entire season. This includes the latent heat of the steam and the heat carried in the condensation.

If the average temperature of the condensation during the entire season is 150 deg. Fahr., which appears a conservative figure, the amount of heat carried by the condensation in excess of 70 deg. Fahr. is 48 million B.t.u. nearly, or about one-fourteenth of the total heat supplied to the building.

Now suppose that the steam rate is $1.00 per 1,000 lb. of condensation which equals practically $1.00 per million B.t.u. then the possible limit of saving on the aforesaid basis in this particular job is about $48.00 per heating season. If the economizer cost $140.00 it will pay for itself in about 3 years.

So, from an economy point of view it pays to extract heat from the condensation and use it for heating the building and preheating the domestic hot water supply.

In addition to the economy feature there is another and greater reason for extracting heat from condensation before it goes to waste; it is the damage done by high temperature liquids when discharged into sewerage and drainage systems. The damage is in the form of cracked sewers, leaky joints, etc., due to overheating. Plumbing codes, municipal rules and regulations, and so forth, prohibit the discharge of hot condensation into house drainage systems and public sewers. This in itself prohibits the practice

(Continued on Page 67)

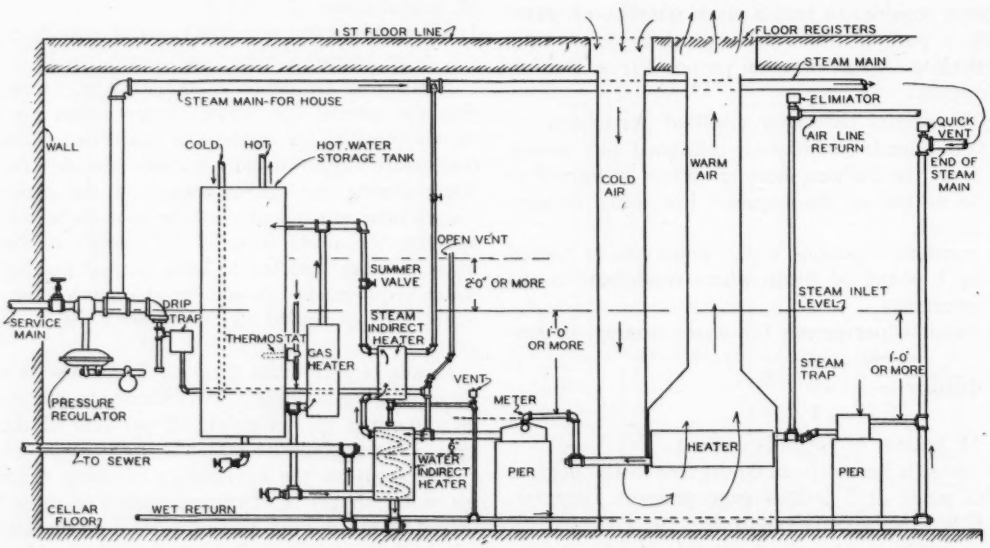
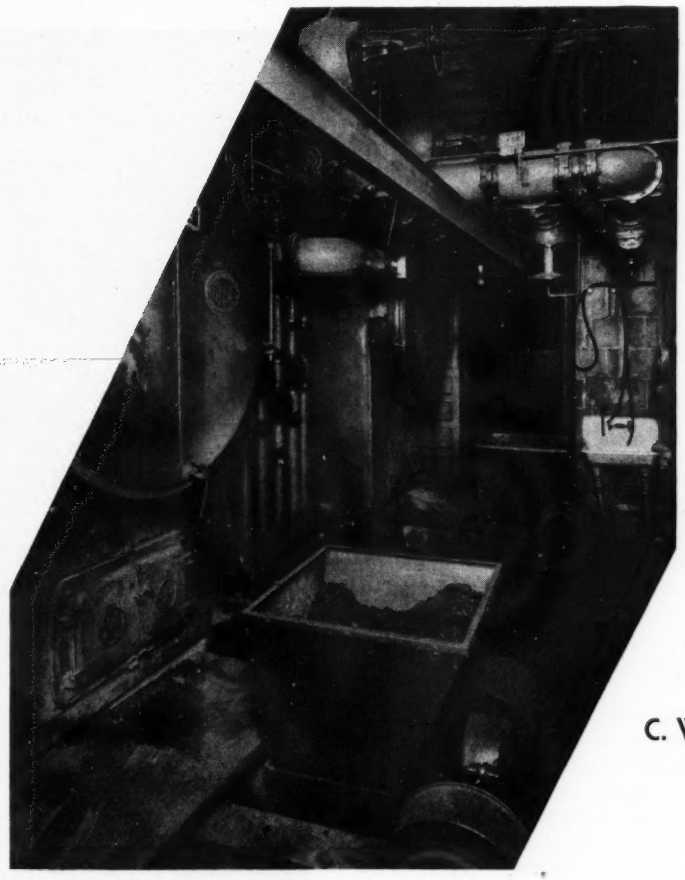


Fig. 1—Example of a highly efficient method of extracting heat from purchased steam condensation and using it to warm the building and heat the domestic hot water supply

Stoker Installation Does Double Duty



View of the complete boiler and stoker lay-out showing the stokers, hot water heater, hender connections with controls, and the coal bucket trolley track

By
C. WESLEY EDWARDS

Heat and hot water are furnished apartments by remodeled plant

AN interesting installation of stokers which are performing double duty is to be found in the apartment building at 1140 North La Salle Street, Chicago. The two stokers in this building not only generate steam for the heating system, but also supply hot water for the building the year round. In this service, the stokers have not only made an excellent reputation for reliability of operation, but have shown a remarkable saving in fuel costs. Inasmuch as the stokers were installed after the building was finished, and their installation would classify as a remodeling job, the careful engineering and skillful workmanship when the stokers were installed have had a great deal to do with these records. This job is an excellent illustration of the fact that careful planning and high grade workmanship are as valuable in remodeling jobs as in new ones.

The building is heated by two steel locomotive fire-box type boilers, each one of which is fired by its own stoker. The two units are both of the same size, having a maximum coal-burning capacity of 350 pounds of coal per hour each. They are controlled by a dual set of automatic regulators, one of which is operated by steam pressure, and the other

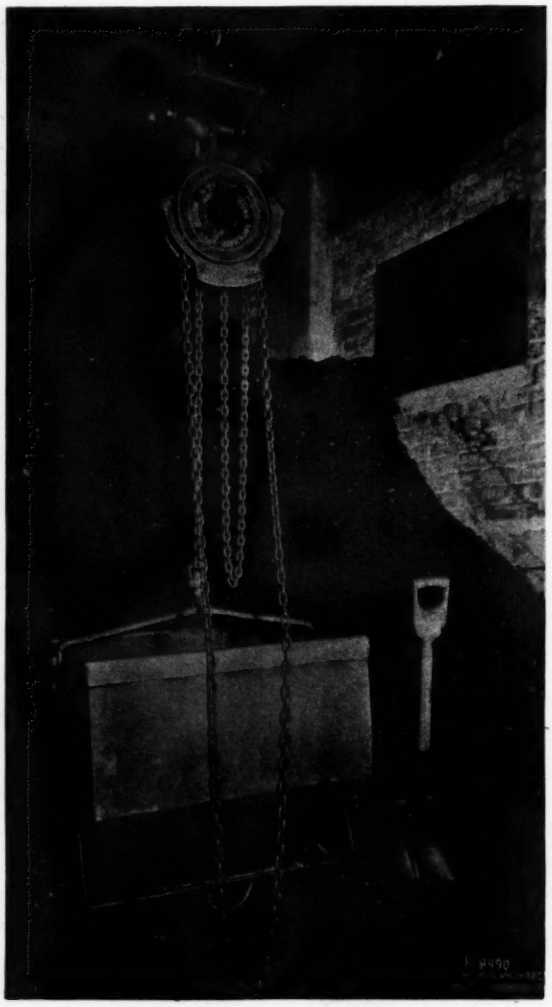
by the boiler water temperature. A throw-over switch is provided, so that either set of controls may be cut into service as desired. Individual switches are also provided for each stoker, so that either one may be cut out of service when not needed.

The hot water supply for the building is heated by an indirect submerged heater. The two boilers are placed side by side, with a five-foot space between shells. The submerged heater is located in this space, with the circulation connections leading to the storage tank at the rear of the two boilers. This tank, of 2,000 gallons capacity, is mounted at right angles to the boilers, on a pipe rack which raises it 5 ft., 6 in. from the floor level. This not only conserves space in the boiler room, but also makes available the floor beneath the tank. The boiler water level is about 12 in. below the bottom of the tank. With the short circulating connections and ample head, the circulation is very rapid and the storage tank heats rapidly, even when operating without steam pressure in the boilers.

The taps for the water heater are taken out of the side of the two boilers, and lead directly into the casing of the heater. Valves are provided in both taps. Naturally, the upper tap is just below the water level of the boilers, so that the heater casing is filled at all times with water only, and becomes a part of the internal boiler circulation. When the valves on both sets of taps are open, the water circulation of the two boilers is tied together through the heater casing. There has been no difficulty in operating because of this fact. On the contrary, it has been found that the load can be distributed between the boilers in any manner desired by adjusting the stoker feeds, and partially closing the valves in the boiler heater taps.

The operating procedure is, of course, determined by weather conditions. Fire is maintained in at least one stoker the year round. In the summer time, the stoker is controlled by a waterstat set in the top of the submerged heater casing. This device cuts in the stoker when the water temperature drops to 160 deg. Fahr., and cuts it out at 180 deg. Fahr. With these boiler water temperatures, and one boiler only under fire, the hot water supply for the building is maintained at 140 deg. Fahr. at the top of the storage tank at all times. When carrying the water load only, the stoker coal feed adjustment is usually cut down so that the machine is burning about 100 lb. per hour. Even at this low feed, the stoker will operate for only short periods, at times of maximum water consumption. On week day nights, the stoker will usually not operate at all after nine or ten o'clock at night, until about seven o'clock the next morning. There has never been an instance when the fire has gone out during the night, and the storage tank is carried at standard temperatures throughout the night.

Another advantage of this method of operating is the ease with which steam can be raised in case of a sudden change in the weather. As the submerged water heater operates regularly to full capacity with a boiler water temperature of only 180 deg. Fahr., there is never any steam in the system while the stokers are controlled by the waterstat. Consequently it is not necessary to close the valve in the steam main, to keep heat out of the radiators. In case the weather turns cold, all that needs to be done is to throw over the stoker control switch from the waterstat to the pressurestat. This will immediately start the stoker operating at full speed, and in fifteen to twenty minutes the steam pressure will be up to normal. It is so easy to raise steam in this installation that it is common practice in the spring and fall

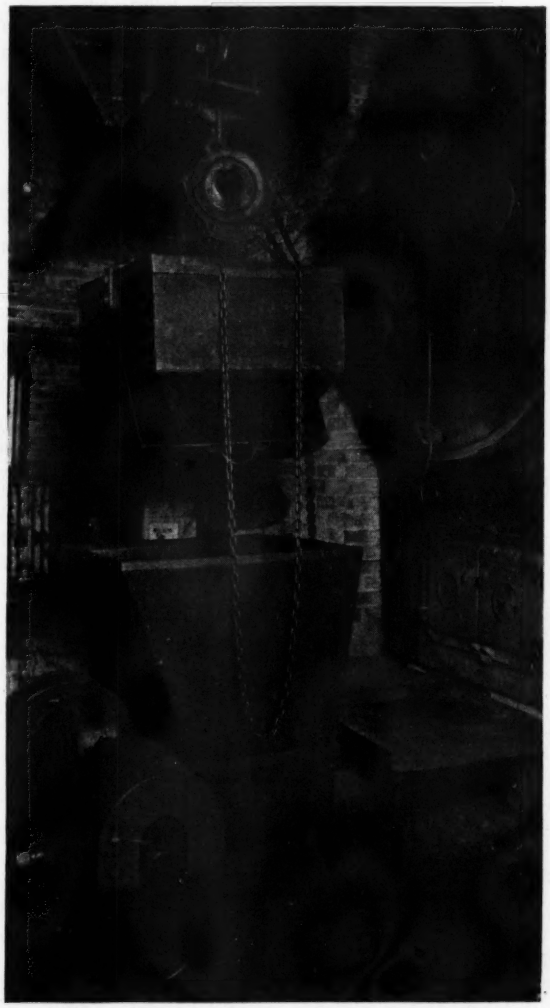


The coal trolley and bucket in the coal bunker. Note the size of coal used. The location of this in relation to the stokers is seen on page 48, where the door to the bunker is shown in the rear of the illustration

to give the tenants heat on cool mornings and evenings, at any time the outside temperature falls below 60 deg. Fahr.

The coal and ash handling facilities are also worthy of note. The stokers are located in pits 16 in. below the level of the boiler room floor, with about seven feet of head room from the top of the stoker hoppers to the ceiling. The hoppers are naturally in line, as the boilers are located side by side. The coal room is next to the boiler room, with its floor about six feet below the alley level. Two coal chutes leading into it from the alley, permit coal trucks to dump

directly into the bins. An overhead trolley track extends through the coal room, across the stoker hoppers and into an area-way just outside the boiler room. The trolley operating on this track carries a chain hoist and a bottom-opening bucket of 300 lb. capacity. This bucket is lowered by means of the chain hoist to any point desired in the coal room, and filled with coal. The full bucket is then raised by the chain hoist and pushed along the track until it is



The motor side of the stoker, showing the coal bucket in place ready to dump. This particular installation has a one hour burning period per 500 lb. of coal

over the stoker hopper, when it is dumped by tripping the bottom gates. As the stoker hoppers hold 500 lb., it is not necessary to wait until the hopper is entirely empty to dump a full bucket.

Ashes are also handled with this trolley equipment. Whenever the fires need to be cleaned, empty ash cans are placed in the pit alongside of the stoker. The clinkers are raked out through the fire door onto a steel ash plate extending across the front of the boiler just below the doors. There they are allowed to cool, and are then raked off the plate into the cans. The full cans are hoisted by the chain hoist, and carried on the trolley to the area-way outside the boiler room. A ramp leads from the area-way to the alley level, so it is an easy matter to carry up the cans and dump them in an ash truck.

Each stoker has an adjustable feed by means of which it can be set to burn a minimum of thirty-five pounds per hour, and up to its maximum of three hundred and fifty. With this adjustment, it is easy to set the stoker and boiler to carry any desired load, even when both stokers are operating. It is customary whenever cold weather sets in, to fire up both boilers. One stoker will be set at its minimum feed, while the other one is adjusted to take practically all of the load. When this unit is up to about 90 per cent of its rated capacity, the other stoker is then adjusted to take the excess. In this way one unit is kept at its maximum efficiency, with the other unit able to take care of increased demand immediately when desired. This method avoids overloading of any unit, with ample reserve, and even greater fuel efficiency.

The saving in labor with this installation is also very remarkable. The janitor seldom spends more than an hour a day in filling the hoppers and removing the ashes. Change in adjustments or regulation is a matter of seconds only. All the rest of the operation is automatically controlled. The reliability of the machine has also been very satisfactory. There were only a few shut-downs during last winter's heating season, these being caused by foreign material in the coal. No severe breakdowns were experienced, and it is felt that the policy of not pushing the machines to the maximum has had a great deal to do with this fortunate record. This building is one of the very few in Chicago which was 100 per cent rented during the year, and there is no doubt but that the excellent heat and hot water service furnished to the tenants was largely responsible.

Factors to Study in Any Stoker Installation

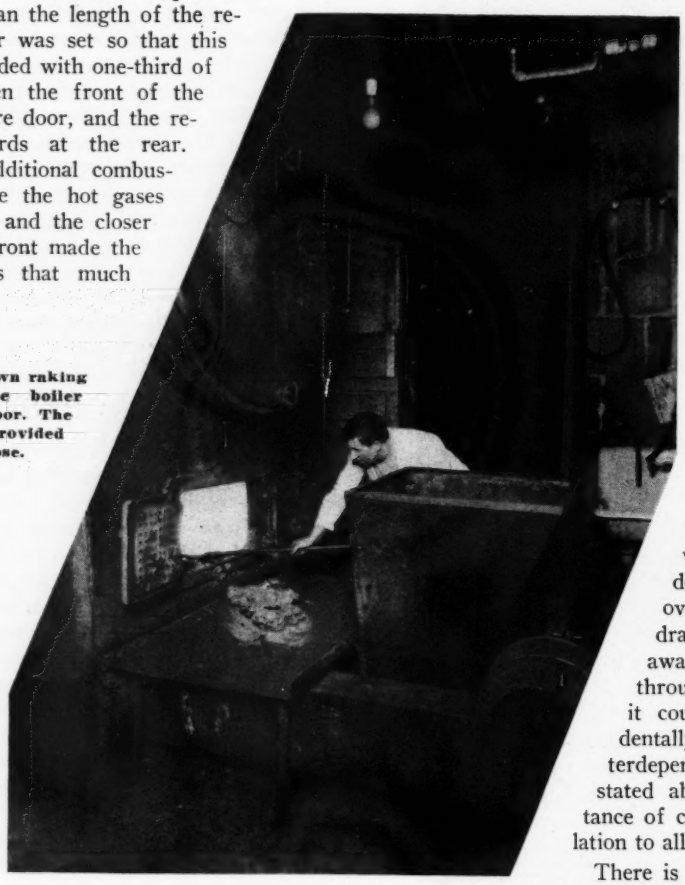
The factors which were considered when this stoker installation was first planned are the same ones which should be studied in any remodeling job where automatic firing might be contemplated. For that reason, a re-capitulation of these factors should prove of interest to all heating contractors. These general factors fall into four sub-divisions, which can be stated briefly as follows:

COMBUSTION SPACE CONDITIONS.
FLUES AND CHIMNEY.
FOUNDATION AND SETTING.
ELECTRICAL CHARACTERISTICS.

Combustion conditions are naturally determined to a very large extent by the design of the boiler or furnace. It is seldom possible, where stokers are to be installed under boilers of medium or small size, to make any radical change in the boiler setting and the combustion chamber. A great majority of the boilers encountered will have a combustion chamber designed as an integral part of the boiler itself. This is true of all steel locomotive fire-box type boilers, practically all down-draft boilers, and all types of cast-iron sectional boilers. It will be recalled that the stokers described above were installed in steel fire-box boilers, so that the shape and size of the combustion chamber were fixed quantities. The

engineering factors involved in the setting of the stokers under these conditions were limited to the retort position and the dead plate layout. These two factors, however, are of great importance in securing efficient operating conditions, and must be watched with great care. In fact, so important are they that a large percentage of stoker dissatisfaction can be traced to one or the other of them.

These stokers were of the underfeed type, with rectangular retorts. The firebox depth was 24 in. greater than the length of the retort. The stoker was set so that this distance was divided with one-third of the space between the front of the retort and the fire door, and the remaining two-thirds at the rear. This provided additional combustion space before the hot gases struck the flues, and the closer distance at the front made the cleaning of fires that much easier. On the other hand, this close clearance introduces another possibility which must be carefuly watched. With active tuyeres and a very hot fire just a few inches from the fire door, it is possible to heat this fire door red hot in normal operation. There have been a good many instances of stoker installations where the fire doors were difficult to keep cool. This is particularly true with steel firebox boilers having large double firing doors. There is an instance on record where a stoker was installed in a boiler of this type, heating a greenhouse near Chicago. With normal weather, the fire doors were not heated to a noticeable point. The first cold night, the stoker ran continuously for several hours, and the fire doors became so hot that they ignited a wooden partition alongside the boiler.



The fireman is shown raking clinkers from the boiler through the fire door. The clinker plate is provided for this purpose.

Such a condition is due to a definite cause—inadequate flue capacity for the removal of the products of combustion. Practically all underfeed stokers use forced draft, supplying in most cases considerably more combustion air than natural draft would furnish. If a bottleneck exists in the boiler passages, the breeching connecting the boiler to the stack, or in the stack itself, the positive pressure of the fan will cause the combustion gases to pile up in the firebox, instead of passing straight through and into the outer air. Fire doors are not water-cooled, as are the heating surfaces of the boiler. So when the hot flames from the retort impinge directly upon them, they will heat to a high temperature.

Flue and Chimney Capacity Checked

In the apartment job noted, this point had been carefully worked out in advance by checking the flue and chimney capacity given as the second factor. It was found that the breeching and stack were of ample capacity to carry away all the combustion gases furnished by both stokers operating at full capacity. It was known in advance that a retort setting within nine inches of the fire door could be used without any overheating trouble, as the stack draft would pull the hot blast away from the fire door and through the boiler passages where it could be utilized. And, incidentally, this also illustrates the interdependence of all of the factors stated above, and shows the importance of considering each factor in relation to all the others.

There is still another stoker specification to be determined by a study of the first factor. This is the dead plate layout. It is general practice in installing underfeed stokers, to fill in the space between the retort and the sides of the combustion chamber with heavy cast iron plates, called dead plates because no combustion takes place on them. There are occasional installations where live plates are used,—that is, plates with damper openings permitting the air to pass through, and carrying an active fire above them.

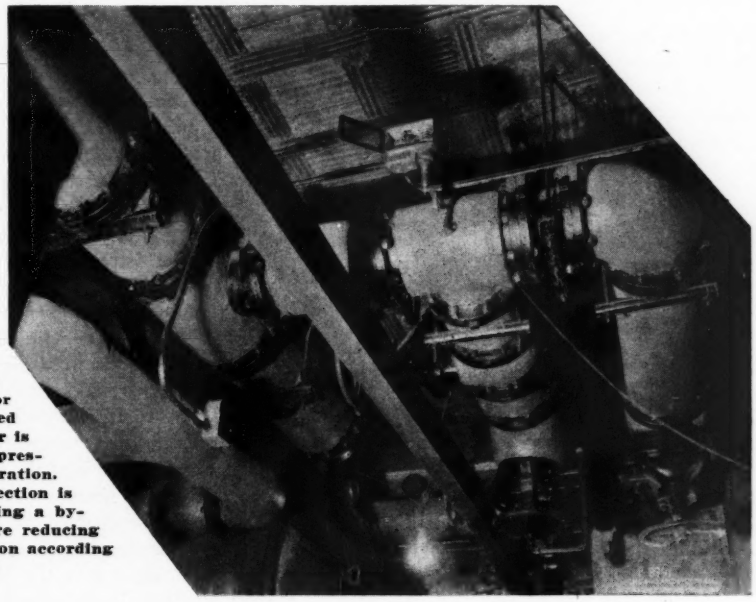
There is a difference of opinion on the part of various authorities as to whether live plates are advisable with forced draft underfeed stokers. There may be individual installations where live plates are necessary to provide the needed grate surface, but this is almost always in large installations. It is becoming general practice in all cases below approximately 100 boiler h.p., to use dead plate equipment only.

In this installation dead plates only were used to

fill in the space between the retort and the four sides of the combustion chamber. These plates have a double purpose. They provide a floor for the building up of the fuel bed, as the fuel is forced up and out of the retort, and at the sides, provide a space where the clinkers formed by the ash can be retained until they are removed when the fire is cleaned. In addition, these plates cover over and seal up the plenum chamber or air chamber surrounding the retort.

The blast from the fan is led by the air duct into this chamber, which distributes the air around the retort to the tuyere openings. It is obvious that this space is under a constant positive air pressure, and for this reason great care must be taken to see that the dead plate joints are permanently sealed and air-tight. It is quite a trick to install dead plates so they will remain permanently tight after being exposed to the heat of the fire for months. It is in this particular operation of stoker installation that inexperienced mechanics have the most trouble, and there are many cases where unsatisfactory stoker operation has been due to trouble at this one point. In this instance, both stokers operated an entire season without developing air leaks through the dead plate joints. If such air leaks do develop, it will not only cause combustion to take place at point where it was not intended, but will also reduce the air pressure, and hence the flow of air, at the tuyere openings. This air deficiency results in lowered combustion rates and decreased combustion efficiency in the retort. During peak loads, this lowered efficiency may be enough to prevent full rating operation of the machine. And the "blow torch" effect at the points of air leakage can easily heat up and burn out the dead plates.

Another important stoker specification determined by the combustion space conditions, is the height at which the stoker is set within the boiler; or conversely, the distance from the crown sheet, or fire chamber dome, to the top of the tuyere blocks. It is common practice to set a stoker so that the tuyere will be approximately on the level of the old hand-fired grates. This is not a hard-and-fast rule, but should be modified where the type and design of the boiler require it. It should be remembered that a stoker using a forced draft will, as a general thing, burn more fuel in a given time than is possible with the hand-fired grates it replaces. This means that there will be more space required for the products of combustion to mix and burn before striking the boiler surfaces. In some stokers there is also the factor of firebed thickness. Certain designs of retorts will push the fuel up to as much as six and eight inches above the top of the tuyeres. This means that a constant barrier of fuel is built up across the firebox for the entire length of the retort. And if the operator is careless about removing ashes, it is easily possible to build up a mass of ash and fuel across the fire box to a thickness of twelve or fourteen inches. Naturally this will not only reduce the actual available space in the fire box, but will offer a definite barrier to the escape of the products of combustion.



Steam and water headers with valves and stoker controls. In the lower left hand corner are the boiler water connections to the water heater showing the water temperature control for summer stoker operation tapped into the header. In the center is the main steam header with pressure control for winter operation. The main building riser connection is just beyond this control, having a by-pass equipped with a pressure reducing valve to moderate the operation according to the weather

Stoker Condemned Because of Faulty Installation

An instance is recalled where a contractor who did not give proper consideration to all these factors, installed a stoker in a firebox type heating boiler. Because of foundation conditions, the machine was placed with only 18 inches clearance between the crown sheet and the top of the retort. When the stoker was started, a high ash coal was used, and it very quickly built up a heavy bed of ashes. As the ash bed built up, the live firebed was forced higher and higher, and within a few hours, was against the boiler. With the combustion space thus choked, there was no chance of complete combustion, and the job

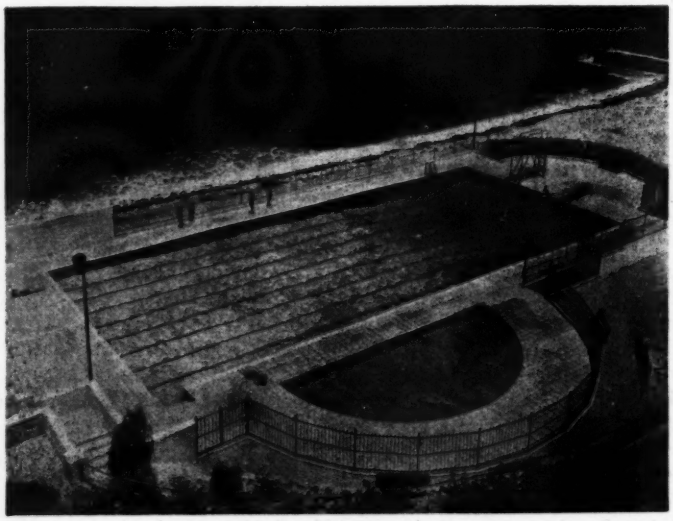
(Continued on Page 102)

Swimming Pool

THE modern swimming pool of 1910 consisted of a concrete tank periodically filled and emptied at intervals of from four to ten days, at which time it was necessarily out of service for at least one day. Sometimes the bottom at the shallow end of the pool could be vaguely seen; at the deep end rarely if ever. No attempt was made to keep the water sterile between filling periods, and the more fastidious bathers were careful to use the pool only on the day after it was refilled.

The pool of 1910 would not be tolerated today. The modern swimming pool of 1930 is designed with scientific skill by engineers who specialize in this line of work. No pool is considered satisfactory today unless the water is at all times perfectly clear, and so pure as to meet all requirements of water for drinking purposes. The "Pool of 1930" has become a miniature water works, with circulation pumps, filters, sterilizing and control devices.

A beautiful modern pool has just been completed at Palos Verdes Estates, California, an artistic suburb of Los Angeles on Santa Monica Bay, south of Redondo. The pool is owned and operated by the residents of Palos Verdes Estates. The site chosen was a cove on the rocky beach under a high bluff which has been terraced and landscaped to make a most picturesque setting. The pool is 105 by 45 ft., with a spoon shaped bottom ranging in depth from three to twelve feet. A club house of Spanish architecture is at the shallow end of the pool and affords dressing, shower and lounging facilities. The pool itself is constructed of reinforced concrete with a sky-blue tile scum gutter surmounted by a single line of 6-in. by 6-in. decorative tile in which blue predominates. Marine-blue tile depth markers are set at intervals below the scum gutter. Five-foot swimming lanes are marked out in black tile running the full length of the pool. Gutter drain outlets are spaced at not over twelve feet, and the concrete walkway surrounding the pool is sloped to



The half-circle is the children's wading pool with the deep end of the main pool to the right and the Pacific Ocean in the background. The building is outside of the view to the left

Sanitation Factor in Swimming Pool Construction Gives Importance to Master Plumber's Work

Yearly the swimming pool assumes increased importance as a factor in the plumbing contractor's business. The pool of today, which may be the ultimate in design, appearance and operation, will soon become obsolete as a result of new and improved standards which steadily are being developed. It was not many years ago when the best to be found was in effect an enlarged bathtub.

Because of the opportunity for disease to be spread in such places, the old time swimming pool soon became a public health matter. Then, in turn, the relation of the plumbing inspector operating under the department of health and the plumbing contractor working under sanitary codes was established definitely in regard to swimming pool sanitation. The result is that now while swimming pools may be designed and their installation may be supervised by engineers and manufacturers of the equipment used, the final word rests with the department of health and its various branches.

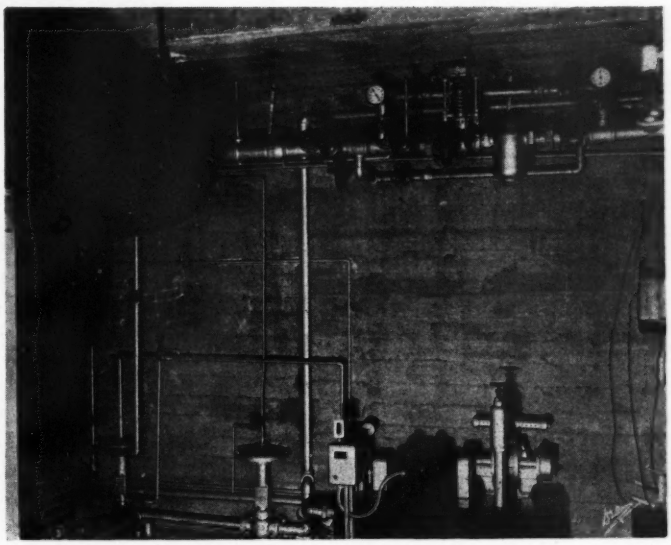
It is recognized that swimming pool work is highly specialized and is constantly becoming more so. Accordingly, some engineers have suggested to us that it is out of place to attempt to give information on the installation of pools to contractors who have not had experience. The reasoning obviously is that half knowledge is worse than no knowledge. However, there is another angle to this, namely, the piping in swimming pools is plumbing work, passed upon by the plumbing inspector and regulated by the health department. Consequently, every plumbing contractor is a potential contractor for this type of work. No knowledge of the work results in no appreciation of what is involved. A single inlet at one end of a pool with a 12 sq. in. area looks the same to the one making the installation as two specified inlets with a combined area of 12 sq. in. and means only half the installation labor, —unless equal distribution of incoming water is mentioned.

Swimming pool work is the plumbing contractor's work. We are offering this article to our readers with working drawings and photographs so that the interested contractor may know what is involved and may appreciate the necessity for correct installations. The letters on the facing page from contractors who have carried on this work successfully clearly emphasize these points.

Popularity Makes Opportunity for Plumbers

A review of developments in this field as they affect the Master Plumber, and accurate data on a salt water pool

By CHESTER D. WALZ



The three pressure regulating valves and the oil feed pump

walk-drains to prevent walk drainage from flowing back into the pool.

Ocean Water Supply

The pool water supply is taken from the ocean. This presented some difficulty, owing to the fact that the beach at the pool site is so rocky as to preclude using a "well inlet system," and that there were no piers, breakwaters or other structures to which an ocean line could be anchored. The engineers determined upon a filling system consisting of an 8-in. cast-iron pipe extending one hundred and seventy-five feet into the ocean and terminating in a "spider" of 3-in. cast-iron pipe perforated with numerous 3/16-in. holes. A trench for the entire system was excavated in the ledge rock by hand, the men working in water to their waists at low tide and placing the pipe section by section. The "spider" on the ocean end and the connecting pipe were then backfilled with large boulders and 3/8-in. gravel.

A serious problem has been experienced at all sea-side pools, due to the sand which is sucked in through the filling pipe and also carried into the pool by beach bathers. This sand makes the pool bottom unsightly, erodes pumps, valves, etc., and is a constant bother to the pool

These contractors have had swimming pool experience

"The average contractor who has never done any swimming pool work really can have no conception of its cost nor any real knowledge as to how it should be installed. In my opinion, any contractor who has not previously done any swimming pool work, before endeavoring to make an estimate should insist upon very definite and complete detailed specifications and detailed drawings showing not only the swimming pool construction but also all of the piping and mechanical equipment connections, not only as to the method of installation but also as to the sizes.

"In addition to this he should have his attention called to the various elevations and details in order that he can properly gauge his labor based on the depths that the lines have to be installed before he endeavors to make an estimate."

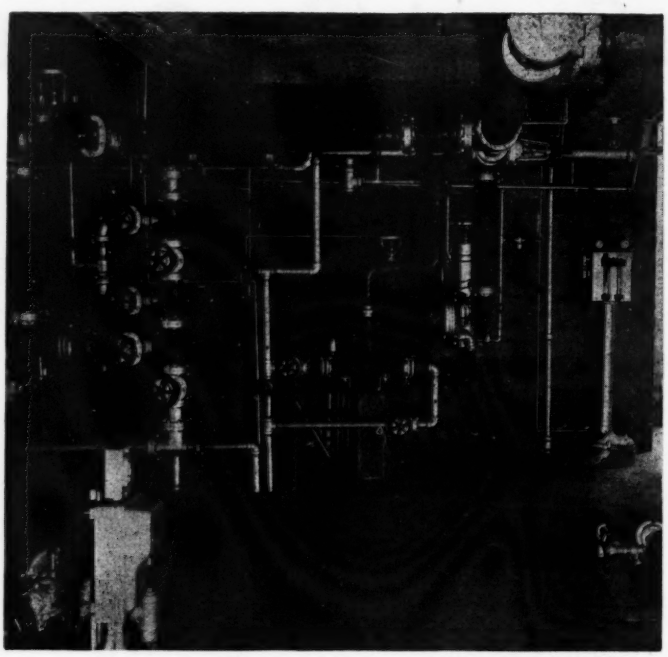
(Signed) Rupert J. Weber,
Chicago.

▼

"Our concern has installed the piping and filtration systems in several pools, made the piping drawings for filtration systems and incidentally has inspected other installations. From our experience, I would say that a contractor doing this class of work should have some experience and knowledge of swimming pools, in order to thoroughly understand how the installation should be made.

"In order to make a good installation it is necessary to obtain the proper data from the manufacturer of the equipment, understand circulation of water in swimming pools, and if necessary know the chemical analysis of the water to determine the method of purification required. If the contractor is unable to obtain this information, and does not thoroughly understand the principle of swimming pool piping systems, I would say that he would get into a great many difficulties that would cause trouble. If, however, the contractor is able to design piping systems, can work with manufacturers on size of equipment, rate of flow of water, types of water treatment, etc., I see no reason why such a contractor could not assume the installation of the average swimming pool with good results."

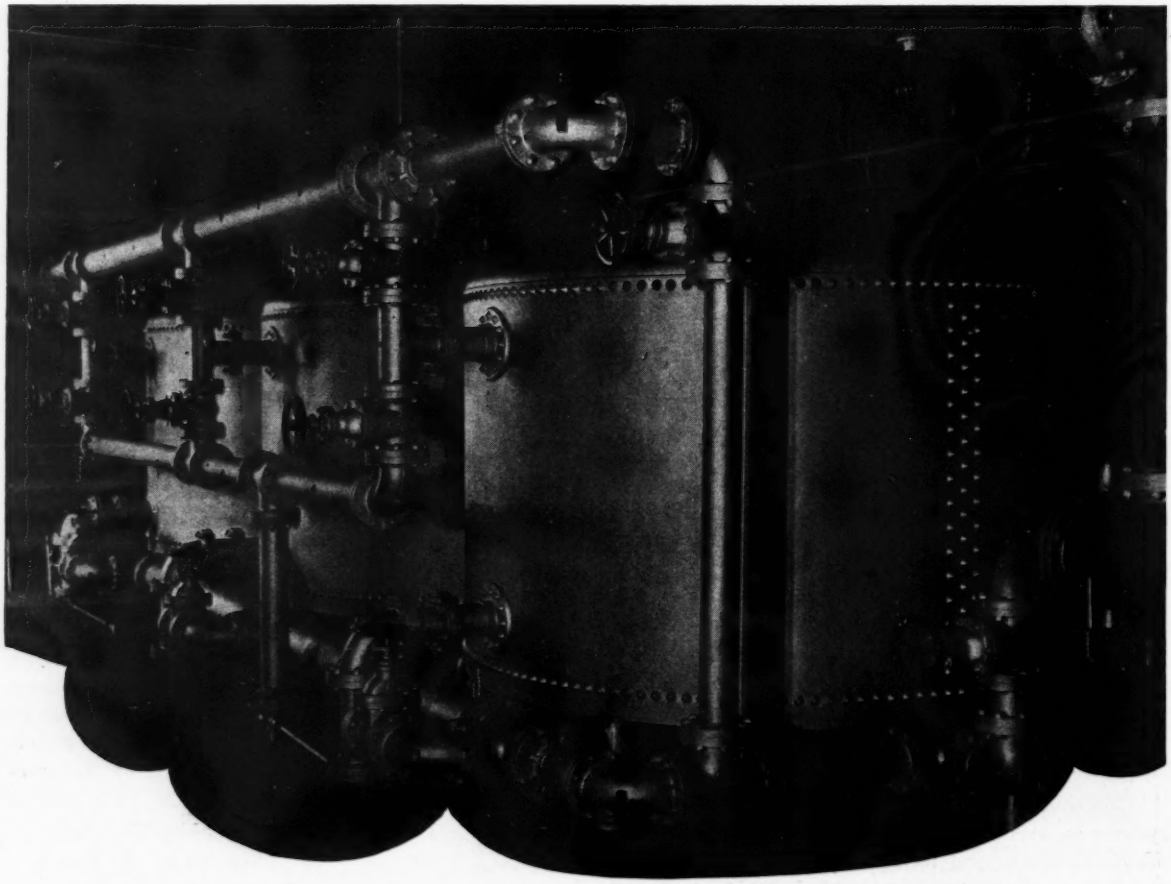
The A. C. Eynon Plumbing Co., Inc.,
(Signed) W. E. Eynon,
Canton, O.



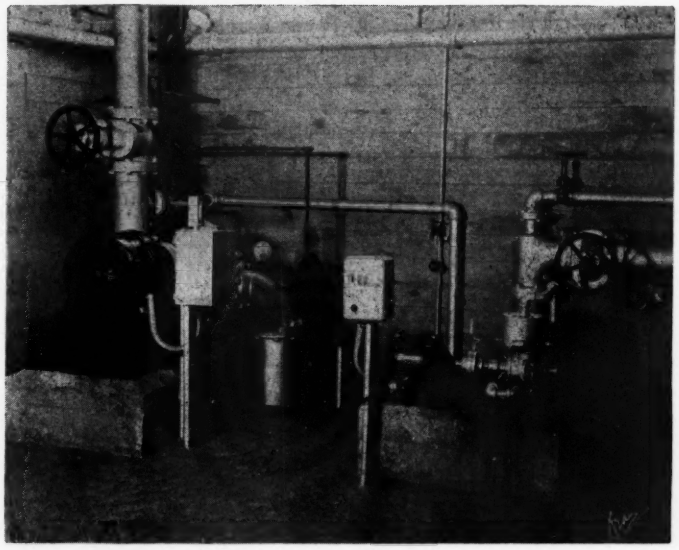
The device at the right is the chlorinator and aerator. In the background are the water heaters for the main pool, domestic use and the children's wading pool. In the foreground are the condensate and wading pool pumps

attendants. To minimize this evil in so far as possible, all bathers coming to the pool from the beach pass through a compulsory wading pool and shower system, and in addition the filling and the pool outlet lines terminate in a three-foot diameter steel settling tank where most of the sand is precipitated. The settling tank is provided with a hydraulic sand ejector and suitable by-passes.

One 4-in. split-case centrifugal pump was installed for circulating and filling, with a capacity of 450 gallons per minute, direct connected to a 10-h.p. electric motor. The pump takes its suction from the settling tank mentioned



The three main filters each 8 ft. in diameter and each having a capacity of 150 gallons per minute

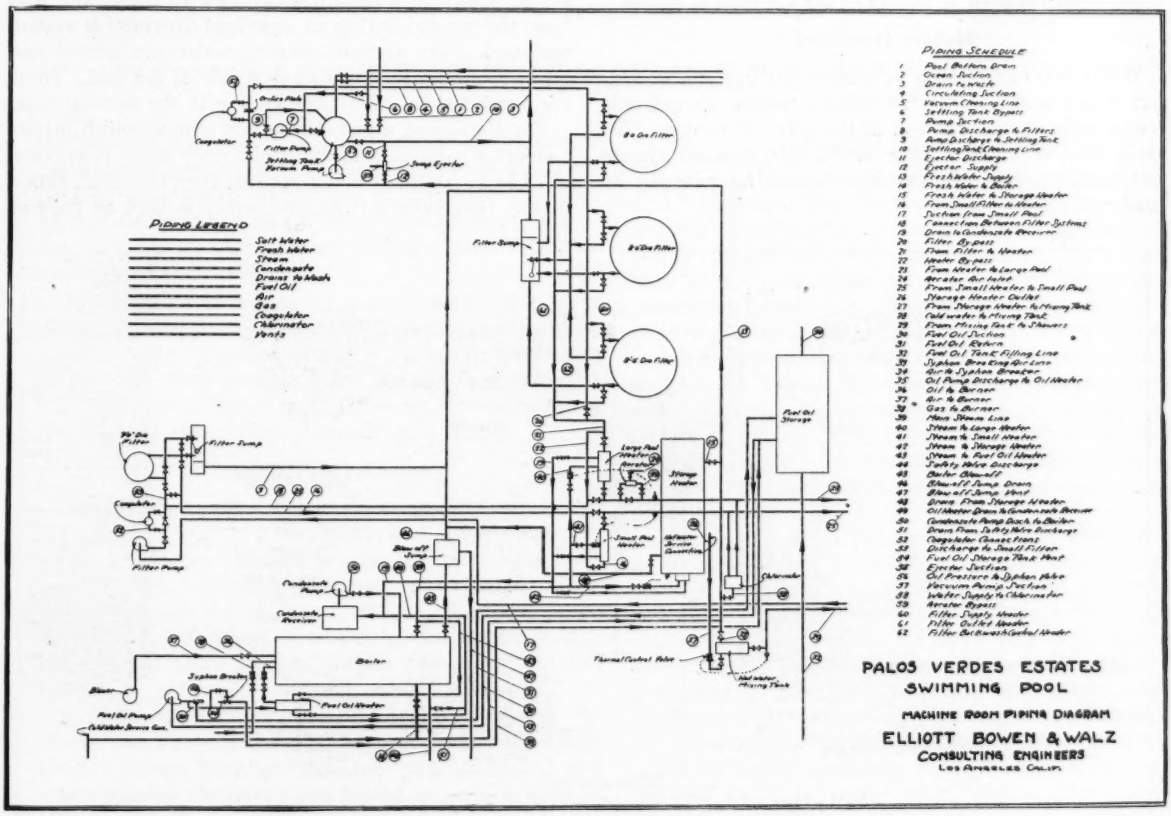


The main pump layout with a capacity of 450 gallons per minute is shown to the left and the small vacuum pump with a capacity of 20 cu. ft. of air per minute is at the right

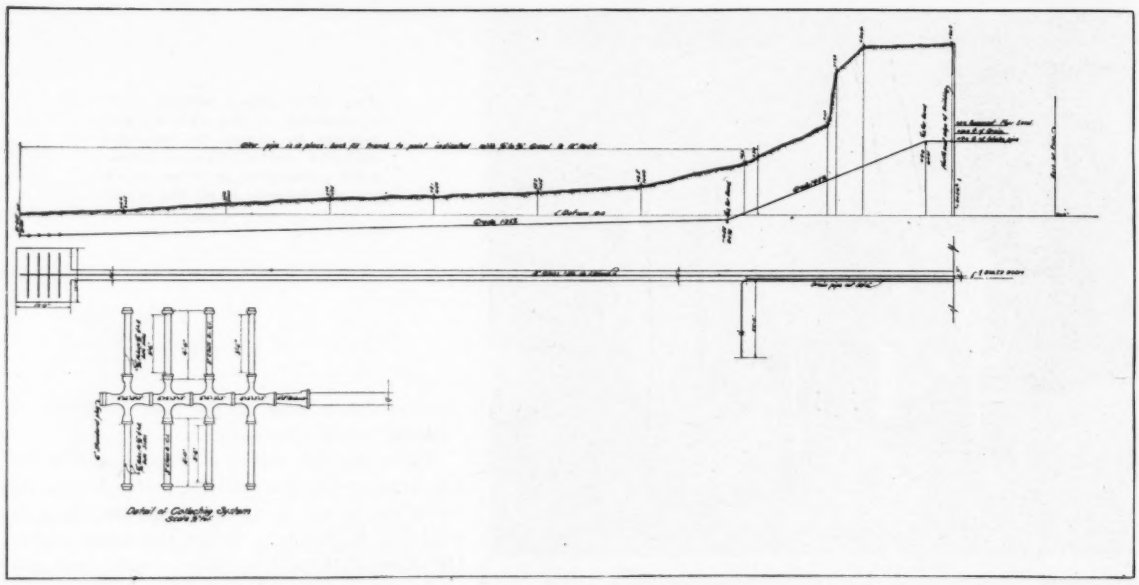
above. The pump is located in the filter and boiler room in the basement of the club house, 8 ft. below the pool water surface. For filling, a priming device was required, since this involves a lift of 13 ft. For this purpose a rotary vacuum pump having a capacity of 20 cu. ft. free air per minute was used. This pump exhausts the air from a riser extending up from the settling tank and is provided with a sight glass gauge. A valved connection also extends to the riser from the circulating pump discharge.

There are two valved 6-in. pool suction lines terminating in the settling tank. One line branches to six 2-in. outlets at the deep end wall 3½ ft. and 6 ft. below the water surface, the other to three 4-in. outlets in the bottom of the pool at the deep point. It has been the experience of the writer that there is a considerable advantage in having a double outlet system of this character.

The filter system consists of three units, each 8 ft. in diameter, set vertically. They are of the pressure type, using sand as the filtering media. In this type of filter the filter bed is cleansed at intervals by backwashing—that is, reversing the flow so that water passes at high


PIPING LEGEND
Salt Water
Fresh Water
Steam
Condensate
Drains to Wash
Fuel Oil
Air
Gas
Coagulator
Chlorinator
Vents
PIPING SCHEDULE
1 Pool Bottom Drain
2 Ocean Suction
3 Drain to Waste
4 Circulating Suction
5 Vacuum Cleaning Line
6 Settling Tank Bypass
7 Pump Suction
8 Pump Discharge to Filters
9 Pump Discharge to Settling Tank
10 Settling Tank Cleaning Line
11 Ejector Discharge
12 Ejector Supply
13 Fresh Water Supply
14 Fresh Water to Boiler
15 Fresh Water to Storage Heater
16 From Small Filter to Heater
17 Suction from Small Pool
18 Connection Between Filter Systems
19 Drain to Condensate Receiver
20 Filter Bypass
21 From Filter to Heater
22 Heater Bypass
23 From Heater to Large Pool
24 Aerator Air Inlet
25 From Small Heater to Small Pool
26 Storage Heater Outlet
27 From Storage Heater to Mixing Tank
28 Cold water to Mixing Tank
29 From Mixing Tank to Showers
30 Fuel Oil Suction
31 Fuel Oil Return
32 Fuel Oil Tank Filling Line
33 Syphon Breaking Air Line
34 Air to Syphon Breaker
35 Oil Pump Discharge to Oil Heater
36 Oil to Burner
37 Air to Burner
38 Gas to Burner
39 Main Steam Line
40 Steam to Large Heater
41 Steam to Small Heater
42 Steam to Storage Heater
43 Steam to Fuel Oil Heater
44 Safety Valve Discharge
45 Heater Blow-off
46 Blow-off Pump Drain
47 Blow-off Pump Vent
48 Drain From Storage Heater
49 Oil Heater Drain to Condensate Receiver
50 Condensate to Pump Back to Boiler
51 Drain From Safety Valve Discharge
52 Coagulator Cleaning Drain
53 Discharge to Small Filter
54 Fuel Oil Storage Tank Vent
55 Ejector Suction
56 Oil Pressure & Syphon Valve
57 Vacuum Pump Suction
58 Water Supply to Chlorinator
59 Aerator Bypass
60 Filter Supply Header
61 Filter Outlet Header
62 Filter Backwash Control Header
PALOS VERDES ESTATES
SWIMMING POOL
MACHINE ROOM PIPING DIAGRAM
ELLIOTT BOWEN & WALZ
CONSULTING ENGINEERS
LOS ANGELES CALIF.

The machine room piping diagram. It is interesting to compare the photographs of the actual piping with the connections indicated on this and the following drawings



A cross section drawing of the pipe line which runs out into the ocean to obtain water for the pool. The detail in the lower left hand corner shows the spider or collecting system

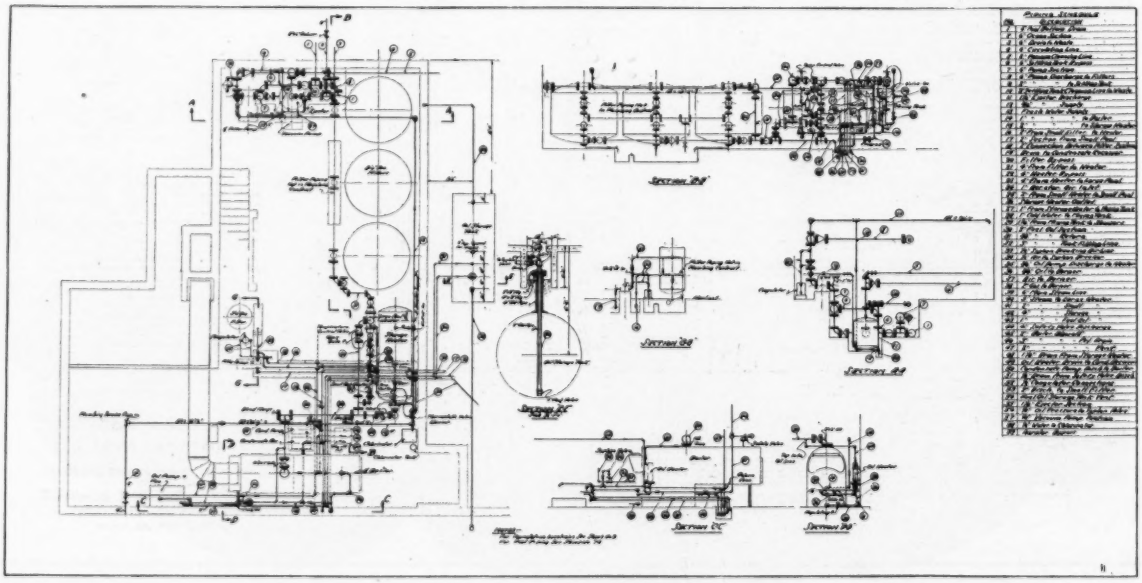
velocity through the underdrain system and upward through the filter bed. For good results a flow of twelve gallons per square foot of filter area per minute is necessary, maintained by a float valve operated from a weir box. The filters are backwashed one at a time with water from the pool by means of the circulating pump.

Metals Insulated

When two metals such as bronze and iron are in contact in salt water, an electric battery results, the galvanic action eating away the iron at the point of contact. To avoid this, the bronze filter lateral and strainer system was insulated from the cast-iron bottom filter header by hard rubber inserts.

The pool has a capacity of 215,000 gallons, and the filters are designed to filter at the rate of three gallons per square foot of filter area per minute. The entire contents of the pool are recirculated every eight hours. There are six 2-in. pool inlets located at the shallow end of the pool. To maintain equal flow to these, and also from the six end outlets an equalized distribution system was used. Four vacuum cleaning outlets are located just below the water line, two on each side of the pool. These are connected to a 2-in. line ending in the settling tank.

For sterilizing, a gas chlorinator is used which injects a chlorine solution into the pool supply line. A residual of .2 to .3 p.p.m. is maintained in the pool at all times. In this concentration the pool water is kept as pure as



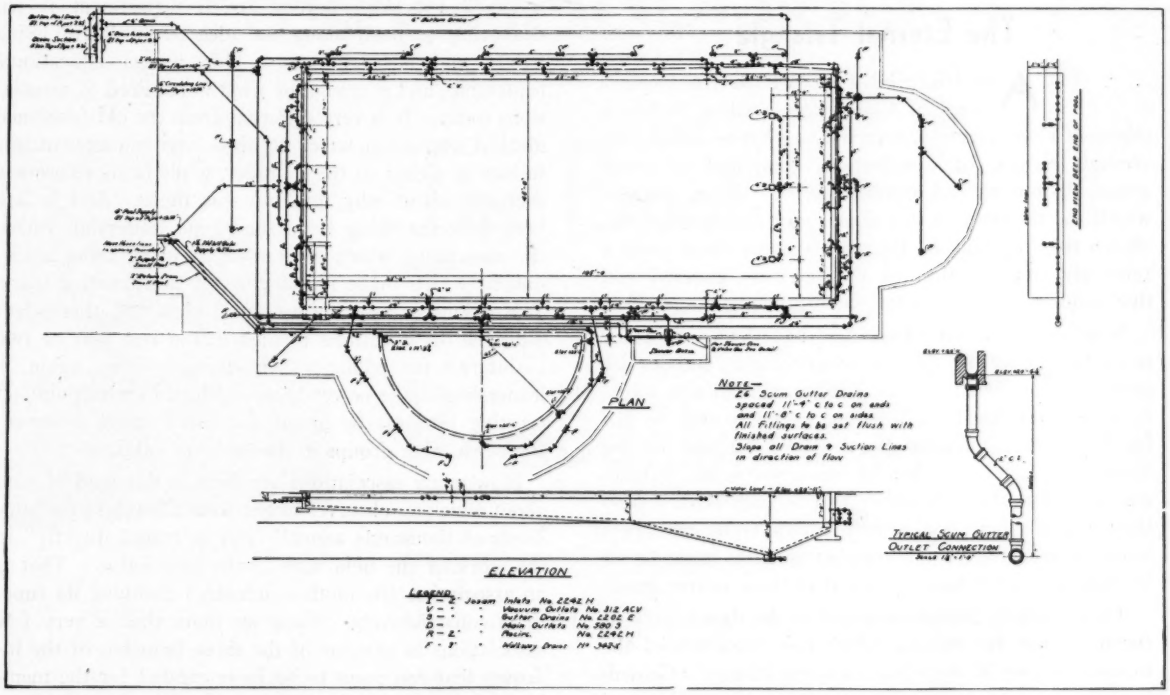
Plan of the machine room with sectional drawings of the piping and equipment

drinking water bacteriologically, with no objectionable features. From time to time bacteria culture tests of the water are made.

An unusual feature of this pool is the aerator installed on the pool inlet line. This consists of a valved by-pass

located as to give uniform illumination without objectionable glare or reflection.

The designing and supervising engineers were Elliott, Bowen and Walz, consulting engineers of Los Angeles, and the piping contractor was E. C. Hull of Redondo.



Plan of the general piping layout for the main pool and the children's wading pool, with a cross section sketch and a detail of the scum gutter connection

containing a hydraulic ejector and an air inlet. With a recirculation system the pool water tends to become stagnant or dead owing to the loss of intrained air. The aerator has given excellent results, and when operated for only a half hour a day the water has retained its sparkling characteristics.

A children's semi-circular wading pool adjoins the main pool and is provided with its separate circulating system, pump, filter and heater. The single chlorinator serves both pools through an adjustable feed manifold. The initial pool supply and the water for backwashing the filter are taken from the main pool supply.

Heating Installation

The heating system consists of a low pressure eighty-horsepower fire tube steam boiler, and straight tube hot water generators through which the circulating pool water passes. Automatic thermal valves on the steam supply maintain the pool temperature. The boiler is designed to be either gas or oil fired, with automatic control. Steam is also provided for the club house hot water system.

A fresh water line is connected to the circulation system so that the pool can be filled with fresh water if desired. Valves were grouped for ease of control and where possible the filter room piping was run in covered pipe trenches.

Four flood lights illuminate the pool. These are so

Swimming Pool Sanitation

ACCORDING to the chief sanitary inspector of Cincinnati, the first official recognition in this country of swimming pools and the need for swimming pool sanitation occurred with the passage of a regulation by the California state board of health nearly twenty years ago. In those days no one thought of requiring a really pure water for swimming purposes. It was simply a question of adding sufficient fresh water occasionally so that the appearance would not be offensive. This was usually accomplished by having a small stream of water entering the pool while in use by means of fountains or other spectacular devices, the sole consideration of the operator being the psychological effect upon the swimmers.

Detroit and Cincinnati were the first cities in the country to take an interest in swimming pool sanitation both becoming active in regulating and supervising swimming pool activities through their health departments very shortly after the California regulation had been passed. Other cities have taken up this work, but even now it is surprising to note that comprehensive swimming pool supervision as a municipal function is the exception rather than the rule in American cities.

All swimming pools are divided into two types; the old "fill and draw pools" which depend upon frequent emptying and filling with treatment, and the "recirculating pools" which use filters and sterilizers.

Editorials

The Eternal Triangle

A REPRESENTATIVE of the Department of Commerce, speaking before a salesmen's club recently, referred to what he called "the eternal triangle of distribution, composed of trade areas, customers and commodities." Every analysis which the department has made, said the speaker, has shown that the bulk of the sales volume came from a relatively small section of the territory covered and that volume in the immediate vicinity of the home office.

It would seem that wholesalers have had a tendency to go far abroad for sales, as inexperienced authors are said to do for their themes. The young man who wants to write feels that he will be successful if only he fills his book with romantic pages about Russia, or the South Sea Islands—which he has never seen. Wholesalers seem to think that they will be successful if only they can fill their books with orders from customers who, because they are somewhat distant, must be of another and better race of men than those nearer home.

This is merely another example of the theory back of the mad rush for volume which has characterized the immediate past in American business history. Growth has meant expansion to most business men. Yet, had they applied the same principles of efficiency as were applied to production matters earlier in the century, they would have seen that expansion was not the answer—but rather a greater concentration of effort.

Manufacturers, in the study of production problems, did not take it for granted that greater production meant, necessarily, plant expansion. They realized that if they could achieve greater production by more intensive use of the plant and equipment then owned, it would mean economies that would automatically make for a wider market.

The same idea can and should be applied to selling efforts—and where it has been applied it has proven profitable. Instead of thinking in terms of expansion of territories, those wholesalers who have thought in terms of intensive working of natural territories have discovered that the rule works in distribution as well as in production.

We face a period of recovery. It is not at all unlikely that, with the charming inconsistency of human nature, we shall have forgotten most of the lessons that were set for us to learn during the troublous period now a part of our past. But let us cling to this one—let us follow the methods of the "efficiency engineers" who thought in terms of intensive use of existing plant rather than in terms of expansion. Let's not permit the grass on the other side of the fence to seem so much more lush than that which is under our feet.

The Association's Job

HOW many state associations are there which, during the past year, did any work in co-operation with their state health departments? Practically every health department is endeavoring to push along the idea of healthful living habits and surroundings. This means educational leadership, and is typical of what is required of associations today. It is very different from the old-fashioned ideal of leadership, which seems to have consisted mainly in having a chip on the shoulder, while being extremely secretive about why the chip was there. And it is a very different thing from the clique leadership within the association which serves only to bring about antagonisms which make impossible any constructive work.

How many associations have identified themselves with the organizations formed in the last year or two to interest the public in remodeling? This, again, is leadership of the newer type—leadership which aims at creating business by broad and constructive co-operation with other groups in the building industry.

How many associations are there in this field of ours about which an observer might write: "Orders for hundreds of thousands annually can be traced directly" to the work of the field men of the association? That is an association (in another industry) fulfilling its functions constructively. Have we more than a very few associations in any one of the three branches of the industry that can point to business created for the members of the industry?

The quotation above concerns an association that should be the ideal for all such bodies in this country. It is time for a thoroughgoing review of the purposes and program of every association in order that it may face the coming opportunity with a modern program of constructive service to its members.

An Audit of Correspondence

AT THE end of each year the well-managed business house has an audit made of its books. This is done so that the management may know accurately just what has happened, instead of trying to remember it, and recalling only the favorable or unfavorable things.

Would an audit of correspondence prove equally valuable? How many letters, of all that were received, went unanswered? And what was the possible value to the firm of those that went unanswered? Were those unanswered letters one indication of unbusiness-like habits that are, perhaps, very clear to possible customers?

We put in a plea for the letter that comes and is consigned to the place of forgotten things, if only because the prompt handling of mail is one of the best indications possible of a business that is managed with precision.

PLUMBING & HEATING MERCHANDISING

This is the way the house looked when it couldn't be rented for $35 a month

The Proof That Remodeling Pays

Here are records of two jobs that plumbing and heating contractors may use in calling prospects' attention to the actual investment value of remodeling

Fourteen Per Cent from Remodeling

WHAT part plumbing and heating play in home modernization may be judged from a job completed during this year in Springfield, Ill. The total cost of the remodeling job was $9,748.34. Of that amount, $2,089.35 was for plumbing and heating, the largest single sum paid to any of the eighteen contractors or merchants who furnished labor and materials for the job.

This home modernization project is one that illustrates one avenue through which this work may not only be created, but a whole community interested in it. Here is what W. F. Dagon, of the "Illinois State Journal" of Springfield, has to say about this job: "Early in the spring of 1930, Mr. F. J. Devlin of Spring-

This is the way it looked when it was remodeled, with a 14 per cent income assured the owner

There was ample room in the old style bathroom—only it didn't help rent the house

field, Ill., purchased an old dwelling located at 214 S. Glenwood Avenue. The home was at one time a six-room house. For years it had been neglected and was in a very poor condition when Mr. Devlin decided to modernize it.

"'The Illinois State Journal' had been conducting a very strenuous home modernizing campaign, and it gave a great deal of publicity to the venture, beginning with the early stages of the building program and continuing until after the building had been inspected by thousands of people from all over central Illinois.

"The original cost of the home and grounds was $4,200. As stated before, the building was in bad shape,

The bathrooms are compact, but of the best, in the remodeled apartments

but the grounds were large and possessed several very fine old trees. The location was a good one, and Mr. Devlin planned to make the six-room house into a three-family apartment.

"The remodeling took about two months and some $9,700 was spent on the house. The photographs will show the wonderful transformation which took place and the home is today one of the show spots of Springfield and attracts numerous visitors every week. This home modernizing improvement has undoubtedly resulted in a great benefit to the building trades of the city and more such work will be seen during the coming months."

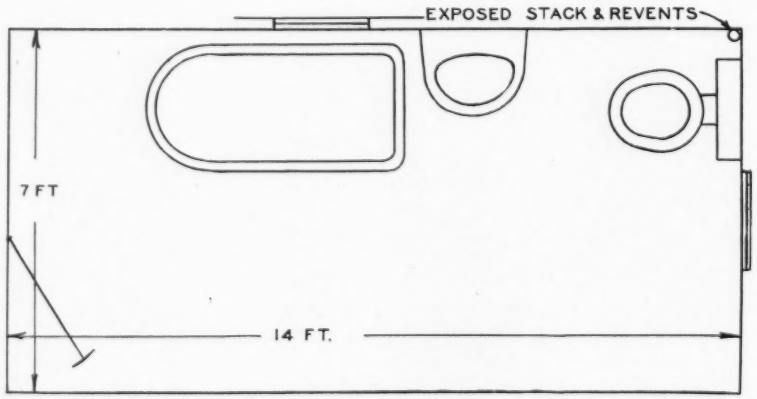
Investing for Profit

This home, as was mentioned above, was an old-fashioned one having six rooms. As remodeled, it will take care of three families. Accompanying this article are sketches of the old and the new plumbing layouts for the bathrooms.

The plumbing and heating was done by O. O. Fry, of Springfield. Following is the material which he furnished and installed: Five-foot, double-shell recess tubs, 18x21 in. white enamel, round front, apron type lavatories with chromium fittings, white vitreous bowl and tank with birch mahogany seat and chromium trimmings, three sinks, and the necessary accessories for the bathroom.

Hot water for domestic purposes is furnished by an indirect heater connected to the steam boiler, and by a coal storage tank heater. The heating is a one pipe vacuum system, with a modern jacketed boiler and modern regulator features. Radiators were harmonized with the rooms in which they were placed.

Now let us hear what the owner



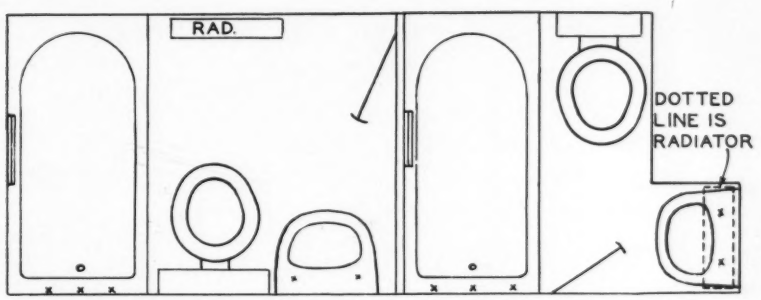
has to say about this remodeling job, in an interview with the "Journal":

"The home was no good to me the way it was. It was too large for a one-family house, and not correctly arranged for two families. It is as near perfect now as it is possible for such a structure to be.

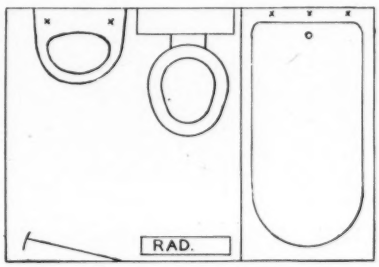
"Before the modernization work was started, I tried to rent it for $35 a month. However, people were not satisfied and tenants would not remain even with such a nominal rent."

The situation, then, was that the owner had a building on his hands for which he had paid $4,200. But even at $35 a month he could not rent it. It is probable that the amount spent for the remodeling job—$9,748.34—is unusually large. But it seems to be justified when the returns are considered.

Since remodeling the home, the three apartments have been leased, and on long-term leases, for $65, $55 and $45, respectively. His total investment, including the original purchase price and the cost of the remodeling, was $13,948.34. His rental for a year will be $1,980, or a little more than 14 per cent return on his investment.



Above are shown two layouts, one for the one-room apartment and the other for the two-room apartment bathroom. Below is layout for the five-room apartment



Modern Demands Must Be Met

In every community there are similar homes, built substantially, but in a day when families thought they needed much more room than we occupy these days. The result is often—as will be seen also from the story which follows this one—that the owner finds himself with unoccupied apartments on his hands. With such definite results as this to present to such owners—a gross return of 14 per cent on the investment—due to remodeling, it should be possible to interest the owner in bringing the house up to date. Often, perhaps most often, plumbing and heating modernization would furnish the needed changes. You will notice that it is usually the lack of proper heating that causes tenants to leave such places in the winter; and old-fashioned plumbing no doubt accounts for much of such dissatisfaction. Apparently in this Springfield house the only method for heating water, for example, was on the kitchen range.

Proof, such as this, is of the greatest value when endeavoring to interest a prospect in the idea of modernization, and we offer this and the following story as examples which the plumbing and heating contractor may use to advantage in their selling efforts.

This is the way the combination kitchen and dining room looks

This apartment building was remodeled and now produces double the old revenue

Remodeled Apartments Meet Modern Demands — and Double the Owner's Income

OWNERS of apartment buildings will recognize immediately the truth of this statement as coming from an authority: "The big, old-fashioned apartments of twenty years ago are hard to rent, in any circumstances. When they are located in a central business district it becomes almost impossible to find desirable tenants for them. The people who want to live in central locations quite generally want small, compact living quarters. They are not attracted by the additional space in the large apartments and even considerable reductions in the rent are not sufficient to offset the work of caring for unnecessary rooms.

"Naturally, even the best of these old buildings ultimately begins to show unmistakable signs of failing income. Vacancies occur more frequently and become increasingly difficult to fill. Unless some decisive action can be taken, values soon turn downward and the building can be filled only with undesirable tenants, bringing with them a host of management troubles."

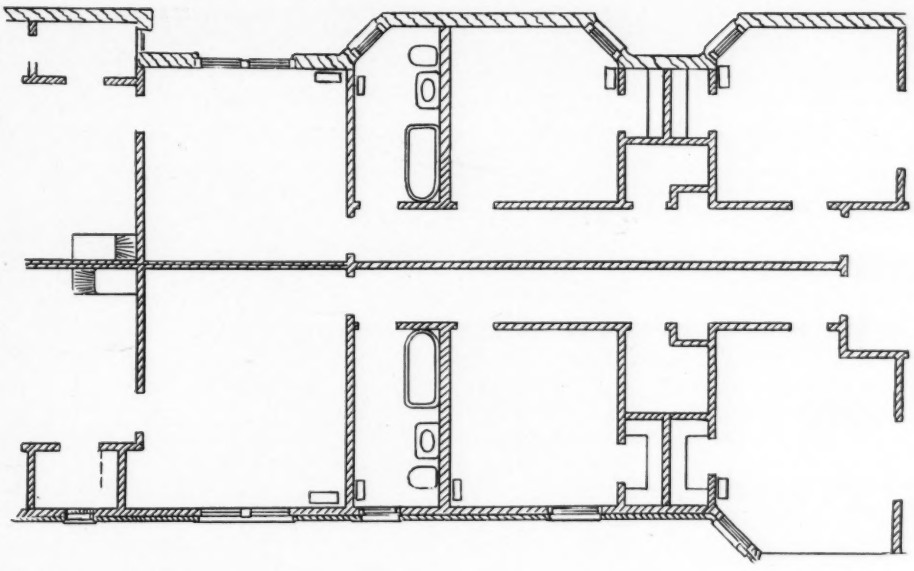
Empty Apartments Pay No Dividends

There, in remarkably brief span, is the problem of the owner of an apartment house of the older type. A good location is rendered valueless by the fact that the apartments are old-fashioned. They do not meet modern demands. It might be added that when the building is at last filled only with undesirable tenants, the most important management trouble which will come with them will be that of a loss on the investment.

Here is an example that should carry strength with any owner of rental property. Doubling the return as a result of remodeling is something any property owner will listen to gladly

The above quotation had reference to the Kahl Apartments, Davenport, Iowa, a picture of which is shown at the head of this article. Because of the location, the stores have always rented well. But the apartments on the upper three floors—twelve five-room suites—began to lose tenants. Vacancies became more numerous and it was harder and harder to find suitable tenants. The owner decided to subdivide the apartments "and to equip them with the modern conveniences."

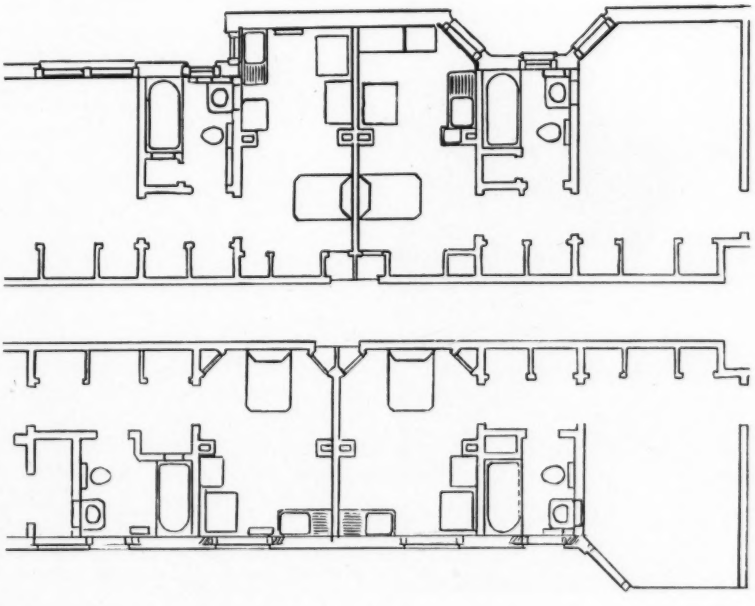
There were originally four five-



Above is shown the old floor plan, with two bathrooms. Below is shown how four baths now serve four apartments in the same area

room apartments on each floor. In remodeling, these were divided into eighteen three-room apartments and six two-room apartments. The building is in two parts, with a light court in the middle. When it was decided to remodel, only one-half of the building was worked on in order to test out the practical value of the plan. Before the work was completed all of the apartments had been rented. Naturally, work was immediately commenced on the remodeling of the other portion of the building.

Careful study of the layout of the building showed that the closets in the two bedrooms on the original plan were back to back. This provided perfect space for a bathroom. The space given over to the two-room apartments permits the provision of a dressing room for each bathroom. All piping was replaced and the old bathtubs were scrapped. The management of the building finds it interesting that, in spite of the fact that the new plumbing installation involves twice as many bathrooms as were in the building, the cost of water has not greatly increased.



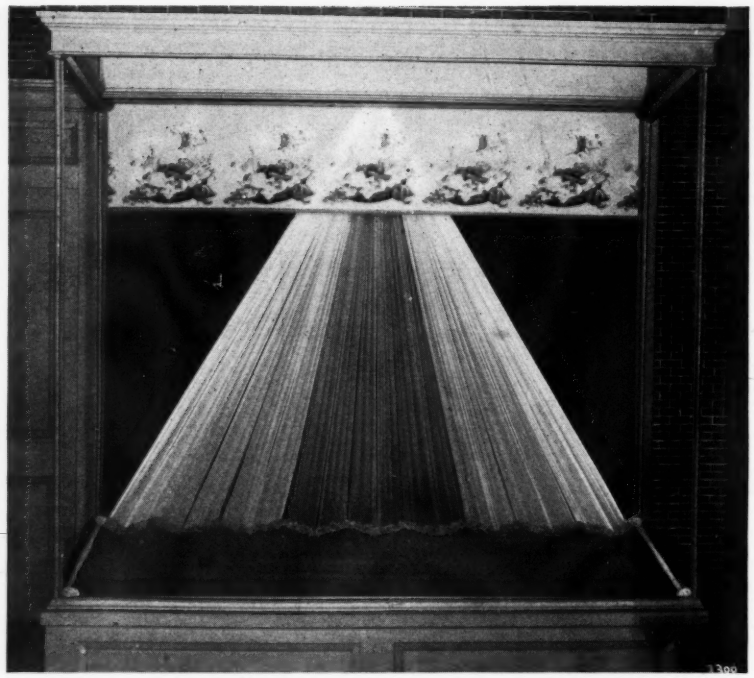
Doubled the Income

Under the old arrangements, the apartments on the court rented at $50 a month, and the outside apartments rented for $55. The average income from the building was $7,200 for all apartments, without regard to the stores. It is found, since the remodeling was done, that the rental income for the remodeled apartments is exactly twice the old income, or $14,400. The annual return on the investment from the property, which has been 6 per cent, is now 8½ per cent, including the interest on the expenditure made for remodeling. "Furthermore," says the owner, "the alterations have made possible renting the apartments to desirable tenants and will probably serve as a safeguard to the value of the property."

Here again is a case which the plumbing, and heating contractor should find worthy of a place in his sales information, as indicating the way out for the owner of the old-fashioned apartment building that has been failing to produce an income sufficient to make a return on the investment involved.

Where the argument to the individual home owner is comfort, and convenience, and appearances, the argument to the owner of rental property is financial—he must be assured that the investment in remodeling will pay him a profit. This story, and the one preceding it, furnish two actual examples of the fact that such investments do pay.

Autumn Changes for Window Backgrounds



AT the right is a photograph of a window background made with crepe paper which will serve as a fall decoration. These backgrounds are of particular assistance to the man who has a permanent exhibit in his window. Without having to change his fixtures, he can give a totally new impression by introducing this colorful and timely background:

1 fold No. 81 Red.
1 fold No. 66 Sunglow.
1 fold No. 65 Orange.
1 fold No. 63 Dark Amber.
1 fold No. 60 Primrose.
1 fold No. 422 Decorated Crepe.
2 folds No. 72 Dark Brown.

Instructions for installation:

Step 1. Cover the base of the window with No. 72 Dark Brown.

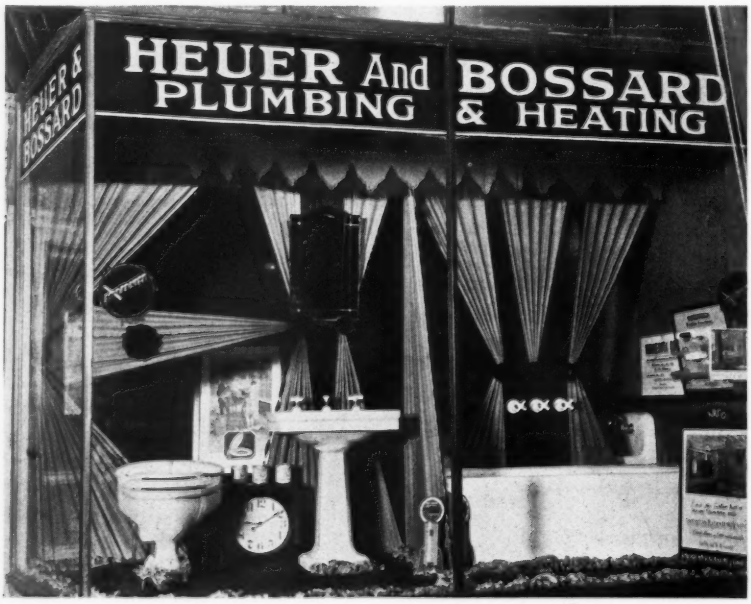
Step 2. Next install the narrow tubes on the base of the window background. These are tacked diagonally, as shown in the illustration, each unit consisting of two narrow drapes 10 inches wide. Beginning at the center and working out, the colors are as follows: No. 81 Red, No. 66 Sun-glow, No. 65 Orange, No. 63 Dark Amber, No. 60 Primrose. Along the base of the drapes, tack a puffing of crepe paper, consisting of No. 81 Red, No. 65 Orange, and No. 60 Primrose.

Step 3. Across the top of the window background extend a strip of No. 422 Decorated Crepe, edged with a tube of No. 81 Red.

Step 4. Outline the margins of the window base and background and sides with tubes of No. 60 Primrose, and tack rosettes of No. 81 Red in the corners.

It is true of most stores that the same people pass them day after day. If there are no changes in the window display, it comes to be taken for granted and is given nothing more than a passing glance. But when a colorful change is introduced, particularly in a window that has become familiar, it exerts a strong attraction.

Below we are glad to reproduce a window display of Heuer & Bossard, of St. Paul, Minn. Here is seen a clever use of crepe paper decoration. The window is a rather shallow one, but by a succession of changes of this kind this firm manages to attract quite a bit of trade to the store and has something of a reputation for tasteful window decoration. Mr. Bossard is president of the St. Paul master plumbers' group.



Materials for the background described may be bought at your local Dennison dealers

Closing the Sale

The Master Salesman discusses the technique of getting the consumer's consent to the sale

I SUPPOSE closing the deal, getting the signature on the dotted line, is about the most ticklish part of a sales transaction to any salesman. From my own experience, I realize how foolish it sounds to say a salesman should never feel more secure in his position than at the moment of closing. It is easy to understand the feeling of tenseness that comes to the salesman who has battled his way through and against every obstacle and finally reaches the point where he should know he has his sale "cinched." But that is where the hitch is—he doesn't know. He thinks he has, probably tries hard to believe he has. To be a good salesman he must believe that the time he has selected to close is psychologically right; that he has closed all side and rear exits against the customer's retreat and that there is no reason left to offer why the sale should not be consummated right then and there.

That sense of security in position can be established almost perfectly, at least humanly so, provided the salesman has watched and studied his progress through the "sale" so that he is thoroughly familiar with all objections the customer has raised. Having analyzed them to the point of discovering the hidden reasons why the customer objected or demurred, he knows how he circumvented their effect. When the actual moment of closing arrives, there must be no hesitation; instead, a mildly confident attitude that implies: "Nothing else to be questioned or discussed, we will close the matter now."

Specializing in Repairs

A master plumber, located in one of our southern cities, has specialized in remodeling and repairs; in fact, he will not handle any contract work that costs over $1,000 unless he can have it at his own price. He worked out and set up a system for handling small work so that it pays him a very handsome profit and costs the customer less money than under the old-fashion schedule of time and material.

When he calls to interview a building official, real estate agent or owner, he explains his plan, carrying the customer through every stage, from introducing himself, his company, and the purpose of his call, telling his story of economic plumbing, creating interest and finally asking for the business and an order then and there to start the ball rolling. He does not discuss prices until he has sold the idea of the service he gives and is ready to ask for some jobs that need immediate attention. Then he lays his catalog of charges for material and labor before the customer, shows him how simple it is to know the cost before the job is started or even ordered, by laying his pencil point on the sort of job being discussed.

In every selling transaction the salesman must find something to fortify him against the weakening that will naturally develop where the customer is holding out on a hidden reason. There being no two contracts, jobs or sales exactly alike, and in the absence of any fixed policy or schedule to govern such a diversity of contacts, a general policy must be worked out.

Some Rules to Bear in Mind

One that is adaptable to the practices of the average master plumber operating in new and old work is suggested in the following rules:

(1) Never approach a prospective customer without an absolutely definite motive; (2) Be in possession of all conceivable information relevant to the objective or the customer personally that it is possible to acquire. Don't make the first call until sufficient information has been assembled; (3) Whether the motive for the call bears upon a new contract, a renovation, a repair or the sale of a household utility, have a number of good and sufficient reasons why the customer should be interested; (4) Make personality an asset. Convey confidence to the customer with an air of frank geniality in the introduction; (5) Make it clear, as early as possible, that the principal object of the call is to get acquainted and, by telling a business-like story of the personnel, equipment, and resources of the company, cultivate interest in the advantages those business assets offer. Tell a good strong story about the efficiency of the company—but tell it in an original manner; (6) Having created confidence, have some job you have done where an increase in value or income was developed as a result of your work;

(7) Getting into the actual motive, instead of in any way urging the customer to adopt what is offered, make it appear that it is the proper thing, but that, unless its advantages will be actually useful and profitable, it is better refused. This rule maintains negativeness on the part of the salesman for the purpose of permitting the result of rule six to get the customer's mind working with the salesman; (8) In discussing details, make the customer do the deciding, being led by the salesman's suggestions along the desired lines. Use "I would suggest," or "don't you think," instead of "you should have," or "I think"; (9) When a customer has gone this far with an interview and now begins to object, he is generally more than half-sold. His objections are defensive and evidence of weakening. Avoid any evidence of overanxiety in meeting the objection. Treat it as another detail of no serious consequence, but in consideration of the customer's viewpoint, something to be cleared up; (10) After these points have been cleared up, avoid abruptness in approaching the point of closing. There is something cold-blooded about signing a contract or an order. It takes away something of the sentiment or personal atmosphere that has been more or less prevalent. Consequently, avoid making the request for an approval formal. Try to keep it surrounded with the friendly atmosphere that has suggested a mutual interest. It is better not to say: "If you'll sign here," or "I have the contract with me," or "I'll go ahead with the work,"

etc. Put it more mildly: "Well, Mr. X, I'm very glad I've been able to please you, and after we finish this work I know you will be most satisfied. I've written up exactly what you want, and I suppose it would add to your confidence if I leave you a signed copy. I'll sign it now—there you are—now, if you please, you may put your name right there."

After all, closing is not the serious part of any sale. Provided every negative has been guarded against through each step of the interview, the customer should have been convinced that he should place his order. With complete co-ordination up to the closing, the customer will almost carry on that part voluntarily. Before going into an illustration on closing, I think it proper to say again, that the most difficult part of closing an order is the lack of confidence in the mind of the salesman that he has actually won.

Not many years ago there was a branch or part of most plumbing businesses that was confined entirely to repair work. But with the beginning of the world war, and the millions spent in new work, this business became neglected, passed over as too small and petty to bother with. Other interests saw the opportunity lying dormant in this neglected part of the industry. They took it up, developed it as an individually independent business. Having no competition, they prospered. Then came the end of the war and boom, and the trade once again turned back to pick up that which they had neglected for two years. But it seemed too late. The market had learned to get their service from the new source; consequently, the tide was slow to turn. Then an enterprising concern with a good reputation took up the fight. It determined that this business belonged in usual channels of the trade and so worked out a policy of selling the idea to the trade that it not only should be brought back, but the trade needed it too badly not to have it.

A Workable Plan

I am telling you now about another master plumber, who voluntarily stepped out of the field of big contracts, when he found he could not get enough volume to make him money on small percentage profits. He turned back to the old customers for whom he had done small jobs in pre-war days, to find tinkers and "direct to you" houses had taken every bit of that business from him. He couldn't cut price to get the business back, and when he offered a low price to feel out the situation, the customer did not seem affected by the offer. He had to map out a plan where he had something to offer that his competitors could not.

He formed his plan in specializing in individual residences and homes of the middle and better classes. In connection with his new work plan, he offered a service of one year, free of charges, with every contract. He worked out the detail of what that service should represent to prevent being taken advantage of unfairly. He had a story to tell of the many adjustments and touch-ups here and there, unavoidably necessary for a year after a house is built, what that costs the owner, and the unpleasantness of "paying to repair something new." He showed where such a service was a guarantee of a first-class job as a matter of protection.

His approach was made to building and loan associations and their stockholders, lot owners, those who owned property that could be remodeled profitably. Banks and trust companies, holding property taken in under foreclosure of mortgages proved interested prospects.

All of this he told in his story. He wasn't selling plumbing, he was selling an idea for consideration. One contact led to another until he had a great number thinking about his plan. Many had not thought of building. His "year of service" story gave him the opportunity to start them thinking about doing something to improve property value and living convenience. He found a reason to back every statement and held every one in readiness for advantageous use when objections were raised. In one instance, the secretary of a building and loan association raised the point that insomuch as they were carrying too much property now to please the state examiner, he didn't see how the board of directors could vote any money for improvements on old property when they had newer ones that were more marketable. In addition, he didn't think they could legally do it, under the existing condition of their holdings.

"Don't try to raise any money for improvements on those properties, Mr. X," said the contractor. "Offer them to your prospects at a price and tell them you will spend $800 in modernizing the plumbing and let them pick out the fixtures."

There was another instance of a trust company that had a heavy list of vacancies. The contractor got this information from the renting department before he approached the real estate officer. When he had introduced himself and explained his service plan of operating trucks equipped with all necessary materials for small jobs, and how that system reduced the charge for repair work, the real estate officer told him they were cutting down on repairs.

"That is no doubt quite true," answered the contractor, "and if you refer to repairs I agree it is good business to wait until you have the tenant before you spend any money. But I am endeavoring to stress with you the importance of getting tenants, not merely seeking orders for repairs. And I think I can safely suggest an idea for your consideration. Let me look these properties over and submit to you what my idea would be of a renovation to make them attractive. Put three of those houses in proper condition, equip them with a few modern fixtures or fittings. If they rent inside of thirty days, figure how much interest your investment on my idea will pay you, if set up against six months of no income at all. If it pays, let me check up on every property your company owns, and has had vacant longer than three months; give you a flat price for the whole job, and I will make the alterations as you order them in. Renting property, I guess you know better than I, is like any business. If business slows down it must be accelerated with clever advertising to speed it up. When real estate lacks tenants, it must have some particularly outstanding feature to make it attractive to the few who are looking for homes."

The entire trend of this contractor's talk indicated unselfish interest in the customer's welfare. He didn't discuss price, because there was nothing mentioned during the conference that suggested price as a factor. In fact, price had one place for consideration—the last—since he had indicated how much more than the price of the job was being lost in the vacant property.

By
TOM
WHITE

When temperature conditions are not what they should be, tiny chips crack and fly from the teeth of the larger specimens. The vault containing skeletons and bones is maintained at a temperature of 55 deg. Fahr.

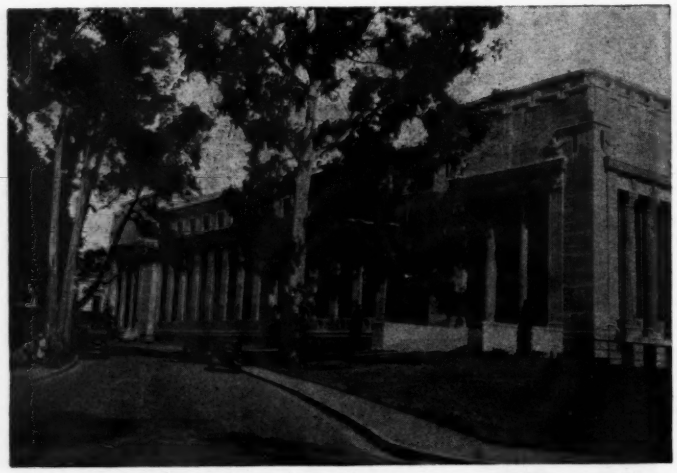
Temperature Control Guards Rare Museum Treasures

Modern science is continually creating new demands and requiring new services of the practical men in the field. The unusual of yesterday is the commonplace of today. The result is that the contractor must keep abreast of the times and expand to include these new services. In this instance, the heating contractor is called upon to meet the demand of the scientist for automatically and precisely controlled temperature conditions.

THE preservation of valuable specimens, such as furs, hides and skeletons of rare and extinct species of animal and bird life, depends entirely on the maintenance of proper temperature. By this means alone are disintegration and attack by insects or bacteria warded off. Without such temperature control, modern science would suffer heavy losses. This is a new field for scientific air conditioning, and one wherein it is proving invaluable.

A notable building erected in late years, part of which is devoted to museum purposes, is the recently completed life sciences building, located on the University of California campus at Berkeley. It is constructed of concrete, is fireproof and earthquake-proof, and is the largest structure utilized for purely academic purposes to be found an any campus in the country.

Costing two million dollars, the new building is five stories high and occupies an area equal to a generous sized city block. It contains more than 400 offices and laboratory rooms, as well as the museum of vertebrate zoology; there is an auditorium seating 500, and a library with a capacity of 90,000 volumes. There is a total floor space of 321,000 sq. ft. The new building provides facilities for the study of



The life sciences building at the University of California where temperature control is carried out to a fine point in preserving furs, hides and skeletons

the following named sciences: Agricultural chemistry, anatomy, botany, biochemistry, zoology, home economics, hygiene, pathology, psychology, physiology and vertebrate zoology. This article is concerned with the storage vaults containing the specimens belonging to the museum of vertebrate zoology.

Comprising over half a million specimens, the collection is the most complete and valuable to be found west of the Mississippi River. Furthermore, with the storage facilities now available, the new University of California is the first and only one of its kind in the United States that is equipped with constant temperature rooms for the storage of furs and skins which have a tendency to deteriorate when subjected to light or fluctuating temperatures, an ever-present condition in rooms where it is not controlled artificially. Air in the vaults is not only kept within one degree of the desired temperature at all times, but the vaults are kept free from moisture.

In the large fur room the pelts of thousands of animals, including such rare or extinct species as the sea otter, marten and glacier bear are hung on specially designed steel racks which make each pelt instantly available for study. Under such conditions, these furs which would ordinarily last only a few years, may be kept for all time, as far as storage conditions are concerned.

Fourteen-Ton Ice Machine Used

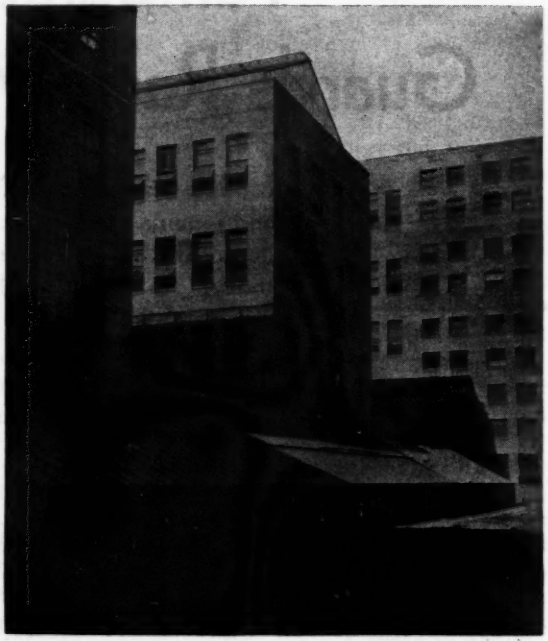
An ice machine having a rated capacity of 14 tons is located in the basement and comparatively close to the vaults. This machine supplies refrigeration to the two vaults and four laboratories.

The vault containing the skins and furs measures 29 ft. square. Its control device maintains a temperature of 38 deg. Fahr., the variation being no greater than one degree either way. This is an ideal temperature for the storage of its valuable furs and skins and, as previously stated, will insure their preservation for all time, as far as deterioration from any cause is concerned.

The other vault containing skeletons and bones is also 29 ft. square, but unlike the first, the temperature control is set at 55 deg. Fahr. This 17-degree higher temperature is best suited for the indefinite preservation of skeletons and bony structures.

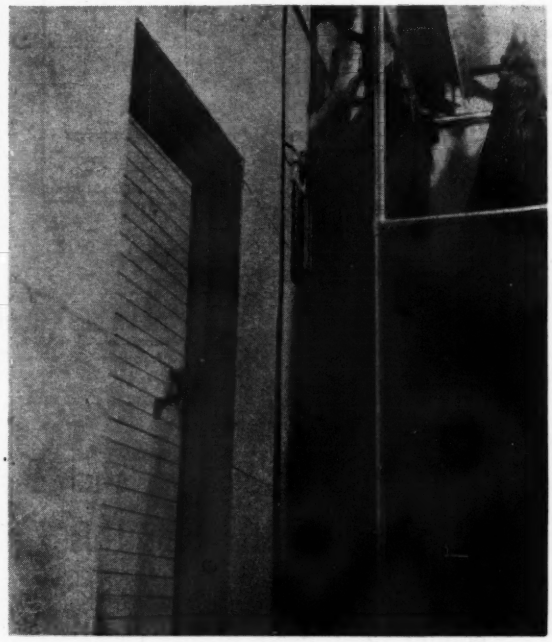
In connection with the bone-vault it is interesting to note the observation of a prominent museum curator who recalls instances of deterioration of teeth in animal skeletons. When temperature conditions are not what they should be, tiny chips crack and fly off from the teeth of the larger specimens, and in so doing they sound like the ricochet of a stray bullet. This is the first sign of disintegration.

In addition to the two constant temperature vaults



The inner court of the science building. In the foreground is the vivarium where plants are grown in temperatures lower than those out of doors. The greenhouse is on the roof of the center wing

for the storage of museum pieces there are four laboratories which range in size from 5 ft. square to 9 ft. by 15 ft. The smaller rooms are designed for temporary storage, while the larger ones are used for carrying on research work in connection with the examination of plants and other forms of organic life. Vacuum lines are also run into these special laboratories from the vacuum pump located in the basement. Temperatures in these rooms are maintained at various points, determined by the character



The fur and skin storage vault. Here the temperature is maintained at 38 deg. Fahr. The thermostat and the thermometer may be seen to the right of the refrigerator type door. Two pelts are hanging at the right

of the work under way, the thermostats being set at the desired temperatures.

Building Construction Insulates Heat

Insulation against heat in the storage vaults and laboratories is accomplished by means of a hollow tile-cork-and-plaster construction. Admittance is gained through the conventional type of "ice-house" door secured with a swing-locking fastener.

Study of growing plants which are found in polar and sub-polar regions, but which require the benefit of natural instead of artificial light is accomplished in the vivarium. This structure closely resembles the well known greenhouse, the chief difference being that the temperature within is somewhat lower than the outside air.

Every year, in common with other collegiate and scientific institutions of the world, the University of California sends out scientists, individually and in groups. These men go to the ends of the world in their efforts to collect specimens of plant and animal life. Their travels are frequently fraught with danger and hardship; and they rarely come back empty-handed. When they return, their work is only half done; having secured their precious material, the next question is: Can it be preserved to aid the work of future students and scientists?

Without proper temperature control this question has necessarily remained more or less open; but, with the advent of modern air conditioning methods, practically all uncertainty attending the preservation of rare specimens, some of which cannot be replaced, has been eliminated.

Utilizing Heat from Condensate

(Continued from Page 44)

in districts that come under the jurisdiction of plumbing laws, and it is enough to condemn the practice even if it did not pay to utilize the heat from condensation.

With reference to extracting the heat from con-

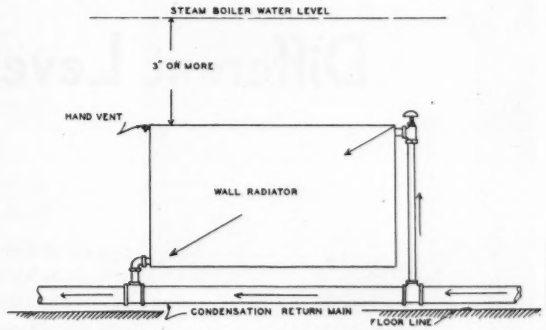


Fig. 2—How a hot water radiator can be connected to a steam return main to heat a small space in basement with the condensation

densation in buildings that make their own steam there is as a general rule no good reason for it, except in exceptional cases where some condensation heat can be extracted profitably and utilized for a special purpose, such as warming a small space in the basement with a radiator or coil on the return main, as in Fig. 2. This arrangement in some cases may be quite serviceable giving off heat low down at the floor where the heat is needed most.

◆

Fuel Oil Ordinance

According to an engineering bulletin released by the American Oil Burner Association, the following excerpts have been taken from a letter received from the Chalmers Oil Burner Company of Minneapolis. "We are having some difficulty with some concerns here in Minneapolis. A new ordinance which we have written for the City of Minneapolis is as follows: 'The commercial standards (grades 1, 2, 3, 4, 5 and 6) for domestic and industrial fuel oils set up by the U. S. Federal Government, Department of Commerce, Bureau of Standards Bulletin CS12-29 (issued November 7, 1929), shall constitute standard grades of fuel oil sold or delivered to oil burning plants within the City of Minneapolis, and it is hereby declared a violation of this ordinance for any person, firm or corporation to deliver and put into the storage tank of an oil burning plant a grade of oil inferior to that ordered by the purchaser.'"

New Problems Are Met When Connecting Water Closets At Three Different Levels

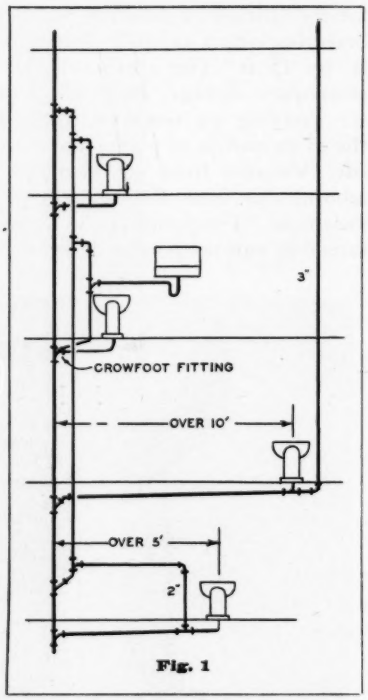


Fig. 1

This is the second and concluding article on this subject by S. M. BARR. Part 1 appeared in the November 15 issue

IN A previous article on this subject, eleven different combinations or layouts were shown, in which three water closets on three different levels discharge into the same stack. Thirteen more combinations of similar nature are presented and discussed in this article.

One of the conclusions arrived at by the investigation into plumbing practice, conducted by the United States Bureau of Standards, which appears in the Hoover report, is the following:—"A back-vented side-inlet branch to a 'crowfoot' fitting on a middle floor offers a degree of protection that makes it unnecessary to back-vent the water closet individually, provided the possible discharge does not exceed that from one bath-room group plus a kitchen sink, or 10½ fixture units."

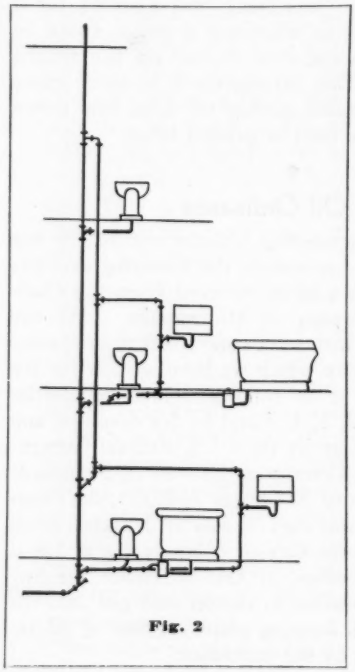


Fig. 2

There are many cities which follow this recommendation, as shown in Fig. 1, in the connections for toilet room.

The point made concerning this method of venting the water closet is very clear. When a neighboring fixture such as a lavatory or a bath tub, connects into the side opening of a crowfoot fitting, if the connection is 2-in., it is considered to be an entirely satisfactory vent for the water closet.

By the way, what is termed a crowfoot fitting in the Hoover report is nothing more nor less than a water closet drainage fitting with one or more side inlets, of which there are scores of different types.

In Fig. 2 on the second floor is shown a waste connection into a side inlet of a cast iron water closet bend, and the vent thus provided through the lavatory connection is just as acceptable as in the use of the crowfoot fitting.

This wet vent for the water closet on a middle floor, either from the iron bend or from the crowfoot fitting is very generally recognized as good practice, although not yet by all plumbing codes. Probably all cities working under the Hoover code would accept such venting.

Fig. 2 is taken from the pilot drawing of a Wiscon-

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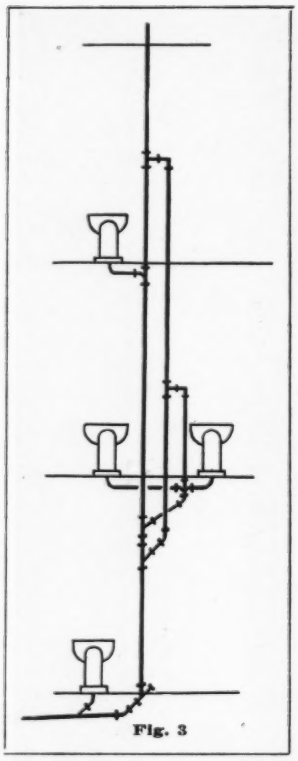

Fig. 3

sin city, and shows two interesting wet vent connections which are somewhat out of the ordinary. It will be observed that on the first and second floor, by two different arrangements, the water closet and the bath tub are both vented by the lavatory connection. Therefore the lavatory vent not only vents its own fixture but two other fixtures as well. As far as we can see, this is an acceptable arrangement.

Calls for 2-in. Vent

Fig. 1 has other interesting features beside that of venting from the crowfoot fitting. It illustrates a requirement made by several New Jersey cities that all water closets in buildings of more than three stories should be vented with 2-in. vent. We cannot see that there is good sense back of such a requirement. It means that even a top floor water closet must be vented. In these same cities, regardless of the height of the building, if a water closet is over 5 ft. from the stack, it must be vented, and if over 10 ft. the vent must be 3-in. and extended through the roof. These features are shown in Fig. 1.

Fig. 3 is taken also from the pilot drawing of a Wisconsin city, and illustrates the following requirement:—

"Where there is at least one 4-in. stack, a basement water closet in a building need not be vented when 5 or more ft. from the base of a soil stack and when not more than 5 ft. from a main line or branch in house drain served by a soil, vent or waste stack."

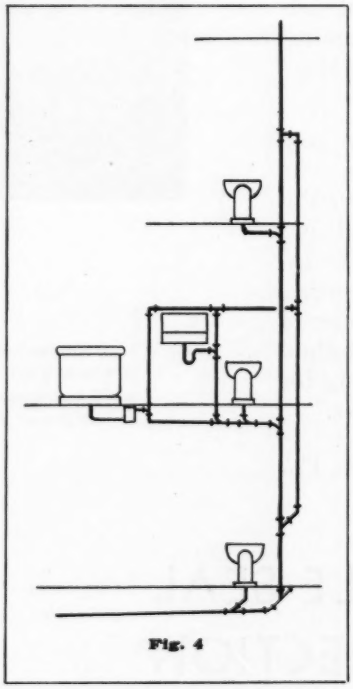

Fig. 4

To show what opposite opinions are applied in plumbing practice, it is interesting to compare Figs. 3 and 4. Whereas in the former, if a basement water closet is over 5 ft. from the base of a soil stack, in Fig. 4 we are illustrating a code requirement found in quite a number of cities to the effect that a basement water closet within 10 ft. of a main soil or vent stack requires no vent. These are opposing views concerning the venting of basement water closets. Our own opinion is that basement water closets should not be exempt from venting under either conditions of location named. We can see no logical reason for requiring no vent for basement water closets.

Individual Connections

Fig. 5 shows interesting connections, as shown by the plumbing code and pilot drawing of a leading city of Pennsylvania. The code requirement in question is that "all waste lines under bath room floors must be independently connected to the closet bend or soil stack." We take it for granted that an iron closet bend is intended in the foregoing. No doubt this requirement would be satisfied by the connection of fixture wastes into side inlets on a crowfoot fitting, for that is to be considered equally desirable as the connection into side inlets on the iron bend. Personally we would favor connection to a crowfoot fitting or iron bend over the separate stack connections shown on the second floor work in Fig. 5, as fewer joints would be required and the work would be more compact and probably more easily installed. In Fig. 5 it is to be noted that the second floor water closet is not vented.

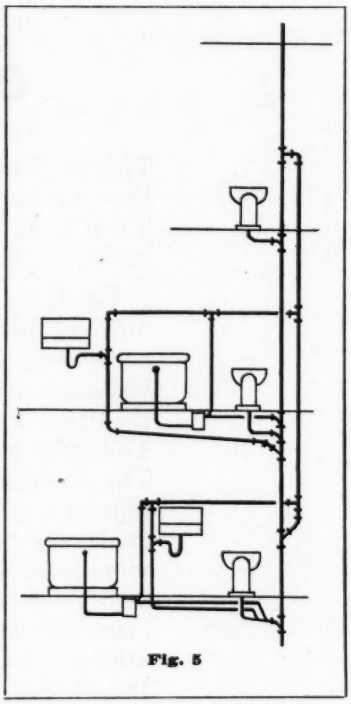

Fig. 5

Needless Venting

In the article preceding this one, we spoke of the unnecessary expense of needlessly venting a top floor water closet located close to its stack. This we find is quite a prevalent practice. Such work as appears in Fig. 6 we have seen on the pilot drawings of Illinois, Missouri, Tennessee and Texas cities, and without doubt there are a considerable number of cities not known to us in which this practice is demanded. It is a situation that we do not understand, for we know it to be a fact that when the pilot drawing was being made for each of the cities we have in mind,

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attention of the interested plumbing officials was called to the undesirability of venting such a top floor water closet, and yet the practice was required to be shown on the pilot drawing.

We have already alluded to one of the conclusions reached in the Hoover report, which apply to the subject we are discussing. Two other conclusions are as follows:—

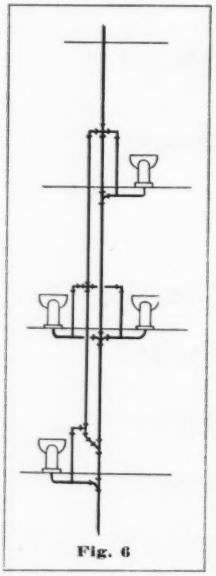
Fig. 6

"In cases where the possible discharge from floors above exceeds 10½ fixture units, it is necessary to back-vent each separate branch individually, including water closet branches, on a middle floor.

"It is necessary to back-vent each separate branch connection individually on the lower floor, including water closet branches, unless there is 3 ft. or more of straight stack below the fittings taking such branches, in which case the rules for a middle floor may be applied with safety."

The meaning of the first regulation is that in the case of such fixtures as the water closet on the middle floor in Figs. 2, 4, and 5 the fixture should not depend for its vent on the waste and vent connection of some other fixture, but should be vented separately. According to the second Hoover statement mentioned above, the basement water closets in Figs. 2 and 5 would likewise need to have individual vents.

Georgia City Covers Wet Vents

One of the largest cities in Georgia handles the matter of wet vents in the following way, as seen in Fig. 7:

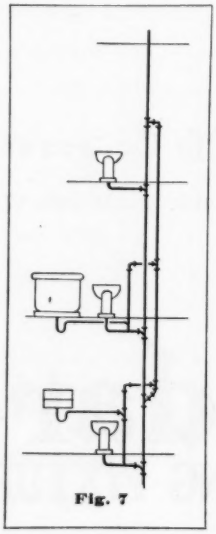
Fig. 7

"Wet vents are allowed as follows: A 2-in. vent from a fixture may receive one lavatory, bath or similar fixture, whose horizontal travel is not over 8 ft. Where the vent is 3-in., it may receive the discharge from baths, showers, sinks, lavatories, etc., having smaller than 2-in. traps. The total fixture units shall not be over 10, and the horizontal travel not over 8 ft. We think the use of the 3-in. vent as a wet vent would come mostly in the case of circuit or loop vents.

There are many cities which apparently feel that water closets cannot be siphoned, and because of that fact do not require them to be back-vented.

In our study of this subject, we have found that a considerable number of cities allow the installation of siphon-action and siphon-jet water closets without venting, but other types of water closets must be vented. We do not understand why one type of water closet should be exempt from venting and another type required to be vented.

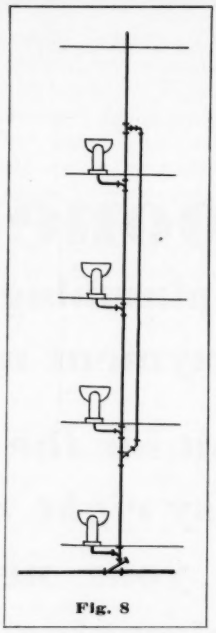
Fig. 8

One of the New York cities shows in its plumbing code and on its pilot drawing the installation shown in Fig. 8, covered by the following regulation: "Buildings with fixtures on four or more floors discharging into the same stack served by anti-siphon traps, must have a relief pipe attached to the foot of the stack by means of a Y-branch and 45-degree bend, and again joined to the stack not less than 4 ft. above the highest fixture, or carried through the roof."

It looks to us as if the use of the relief pipe constituted an admission that after all non-siphon traps might siphon. Apparently the relief pipe is called for in the case of a line of water closets on four or more floors also, for the pilot drawing shows the installation seen in Fig. 8.

Several Michigan cities have in the past allowed the installation of unvented plumbing systems or systems in which only certain fixtures were unvented. In these cities the use of the so-called non-siphon trap was common. Under the new Michigan state plumbing code we presume these conditions may have been or will be altered to a considerable extent. Figs. 9 and 10 are two elevations taken from the pilot drawings of Michigan cities, which illustrate the lack of venting we have mentioned before.

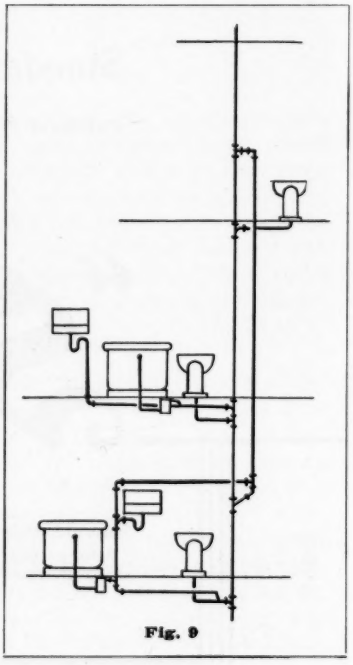
Fig. 9

In the case of Fig. 9 it will be seen the middle floor fixtures apparently require no vent when non-siphon traps are used, whereas fixtures on the lowest floor must be vented in the usual manner. Here the wet vent is used for the water closet in a different way than shown in our other illustrations. It will be noted that the combined waste of the lav-

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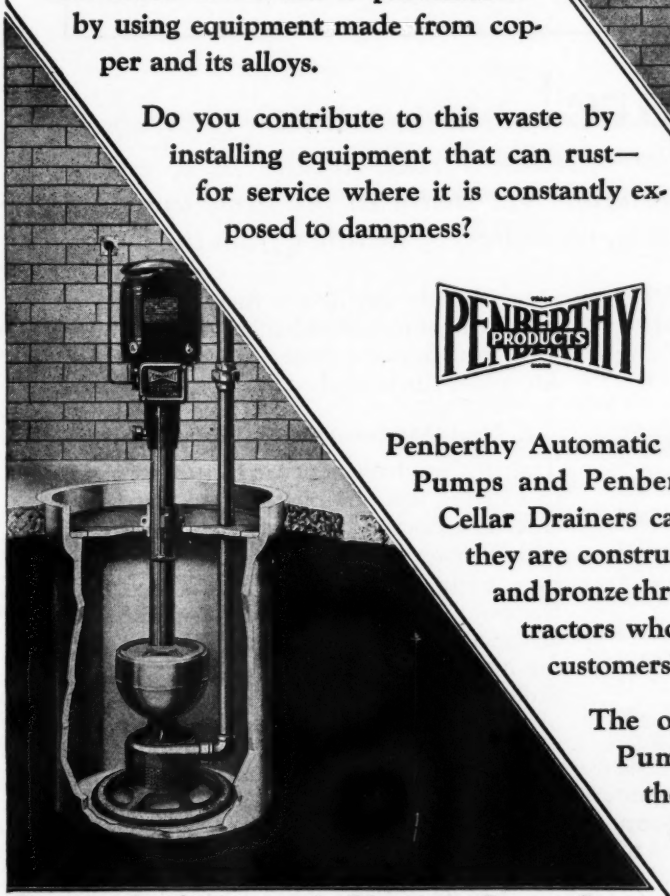

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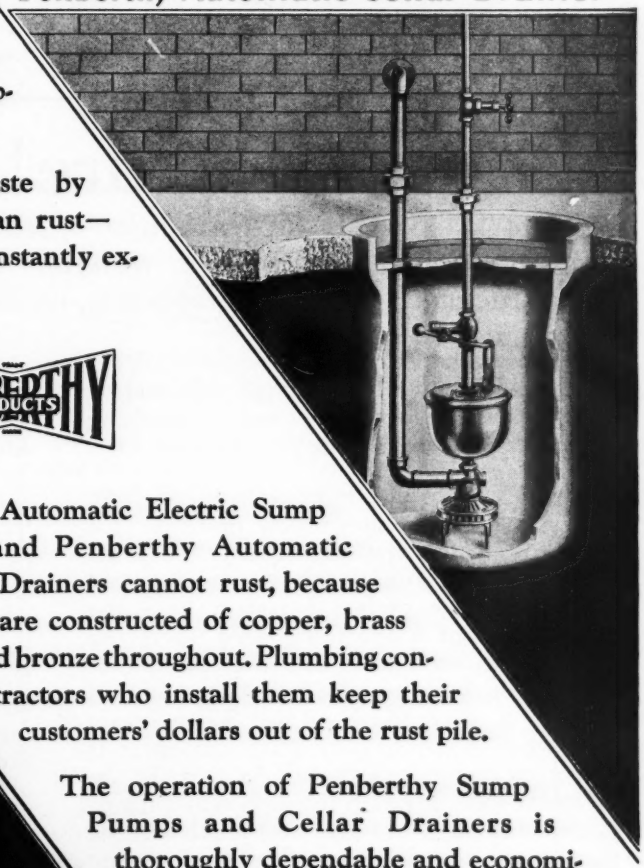

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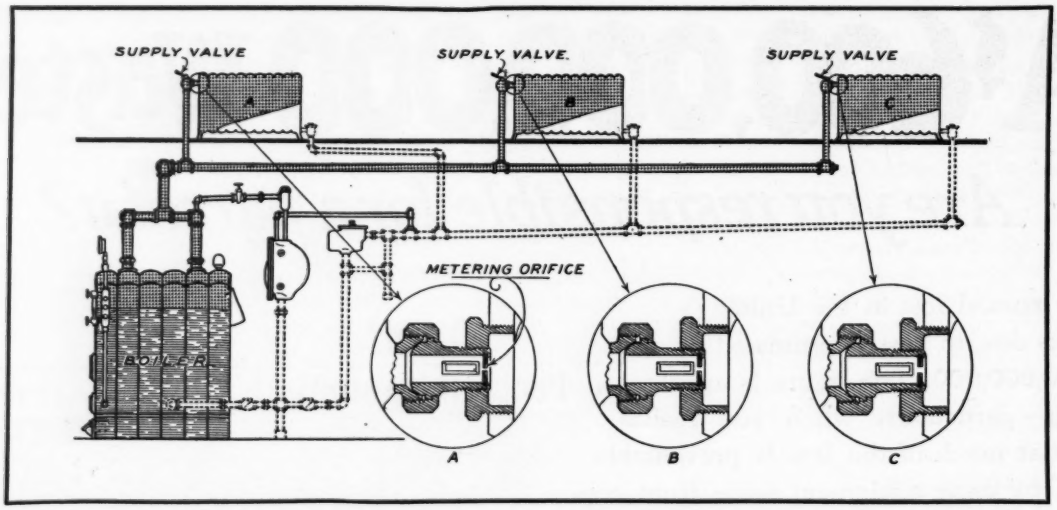

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atory and bath tub serve as a vent for the water closet, and that the bath tub itself is wet-vented by the lavatory connection.

Not Favorably Impressed

In the case of Fig. 10, the plumbing code calls for the connection of all wastes from baths, basins and other fixtures into separate Y-branches on vertical stacks. Also, iron closet bends with side inlet may be used for one fixture, without venting same, if the inlet is at the top of the bend and at 45 degrees to the direction of flow.

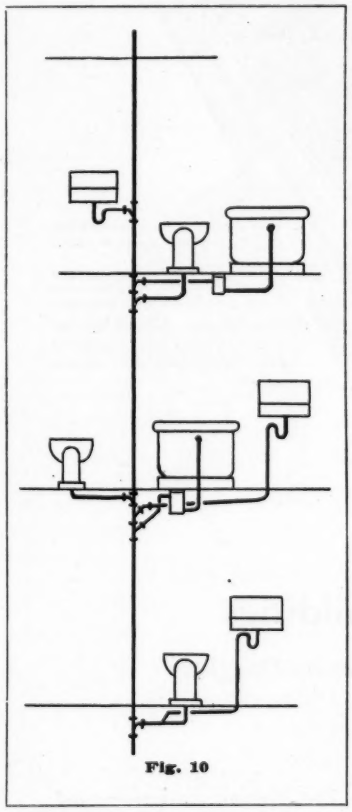


Fig. 10

We are not at all favorably impressed with such work as shown in Fig. 10. We are especially critical of the connections for the bathroom on the middle floor. The waste connections into the stack of the three fixtures could not possibly be arranged more poorly, it seems to us. If we were going to install the three bathroom fixtures without vents, we would certainly see to it that if possible the entrance of the water closet into the stack came at a point below the entrances of the other two fixtures. Then the aspirating effect of the discharge of the water closet would not be felt by the other two fixtures. When the water closet is connected above the other two fixtures, as in Fig. 10, the rush of the water closet flush past the entrances of the other fixture wastes certainly produces a strong aspirating effect on the two traps.

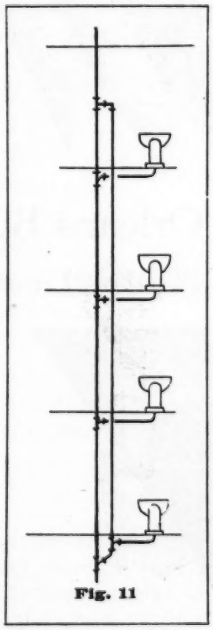


Fig. 11

Variety of Opinion

One of the Tennessee cities has the following plumbing ordinance in effect:

"When three siphon-jet, wash-down or hopper closets with P-traps only are on a 4-in. stack, and each is within 4 ft. of the stack, the lowest water closet need not be vented. If four water closets are installed, the lowest one only need be vented." This practice is illustrated by Fig. 11, taken from the pilot drawing of the city in question. Here again certain types of water closets are selected as being free from siphonic influence, but the types are not the same as those mentioned in this same connection earlier in this article. This is quite a good instance of the variety of opinion on the same subject. We know of no line of work where opinions are at such variance as in plumbing. According to one code, a certain thing must be guarded against at all hazards, and perhaps the code of the town next to it considers this same practice most excellent and desirable in every way.

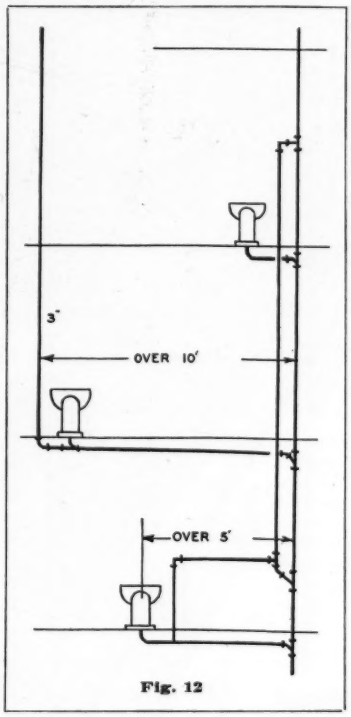


Fig. 12

The last two illustrations of plumbing layouts that we have to consider are Figs. 12 and 13, both of which deal with the venting requirements for water closets which are located at a distance from the stack into which they discharge.

Fig. 12 shows the practice in several New Jersey towns, as shown by their pilot drawings. When the water closet is 10 ft. or more away from the stack, it must be vented with 3-in., and the vent carried through the roof or into the main stack at a point above all fixtures. When the water closet is between 5 and 10 ft. from its stack, a 2-in. vent only

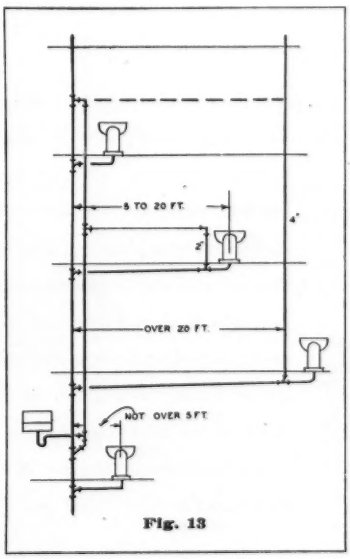


Fig. 13

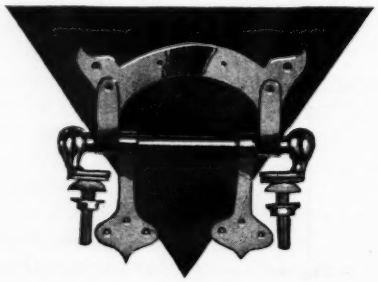
(Continued on Page 107)

MEETING ARCHITECTURAL STANDARDS OF QUALITY

1. *Roosevelt Hotel, New Orleans, La. Favrot & Livaudais, Ltd., architects.*
2. *Southern Baptist Hospital, New Orleans, La. Favrot & Livaudais, Ltd., architects.*
3. *Eli Lilly & Co., New Orleans, La. Favrot & Livaudais, Ltd., architects.*
4. *Charity Hospital, New Orleans, La. Favrot & Livaudais, Ltd., architects.*
5. *New Orleans Public Office Building New Orleans, La. Favrot & Livaudais, Ltd., architects.*
6. *Federal Land Bank, New Orleans, La. Favrot & Livaudais, Ltd., architects.*
7. *Union Indemnity Building, New Orleans, La. Moise H. Goldstein and Favrot & Livaudais, Ltd., associate architects.*

7 Prominent New Orleans Buildings

are distinguished by Nickel Silver Plumbing Fixtures by Douglas



18% 22 Nickel SILVER

IN the construction of buildings having a semi-public or institutional character, architects and builders recognize the value of standardizing on plumbing fixtures that are attractive in appearance, lasting in finish and color and not easily marred or broken either in use or during installation. Solid Nickel Silver plumbing fixtures have an attractive, silvery lustre similar to that found in Pure Nickel and other high Nickel Alloys. They are corrosion-resisting and unusually easy to keep clean and spotless. Their hardness, toughness and strength insure remarkable resistance to wear. They give years of satisfying service even when subjected to severe usage. Today many modern buildings demand the highest quality sanitary equipment available. For these quality installations reflecting modern standards, there is no substitute for Solid Nickel Silver plumbing fixtures.

THE INTERNATIONAL NICKEL COMPANY, INC., 67 WALL STREET, NEW YORK, N. Y.

The job is started. Will the estimate stand up?

The second article on **Why**

Actual Costs Exceed Estimated Costs

By WILLIAM MORRIS

Broken fixtures, failure to inspect, inaccuracy in figuring, lack of clearness in specifications, sharp practices on building contractors' parts—these are some of the things covered by Mr. Morris's first article published in the October 4 issue. He continues his study.

ABOVE are listed the causes, touched on in the first article, which may run the actual cost of a job above the figure arrived at in making the estimate. We continue with further factors which must be closely watched.

Taking for granted that a certain fixture is intended where it is not made clear in the specifications. This is a prolific cause of misunderstanding that very often leads to loss of money and customers. The specifications being indefinite you may think that the matter of fixtures is being left to your good judgment, which you use to the best of your ability by figuring on fixtures that one would expect to find in a house of the class you are estimating on. Everything goes well until it is too late to withdraw; then you discover that the owner has very definite ideas about the whole matter. It is positively amazing what expensive ideas can be developed between the time the specifications are made up and the fixtures installed. Protect yourself by insisting on detailed specifications.

We give on the next page an actual example, showing what happened where the specifications were not definite. As the examples shown are taken from records some of which are three years old, the costs given for certain material may be slightly different from prevailing prices.

The cost of material and labor, $411, divided by 70, gives us $5.86, or one per cent; and this, multiplied by 100 gives us $586, the amount of the bid. The difference between the cost of the material and labor, $411, and the amount of the bid, $586, is $175, which is the amount of overhead and profit combined. Two-thirds of this amount, or $117, is the amount of the overhead alone, and one-third, or $59, is the amount of the profit.

Because the matter of the percentage to be allowed for overhead and profit is of such vital importance and so little understood, we digress for a moment to explain that in allowing twenty per cent for over-

head and ten per cent for profit in the examples given herewith, the ten per cent is intended to represent the total amount the proprietor receives. This is done because these figures are better for purposes of illustration. In actual bookkeeping, however, the best method is to charge a weekly salary for the proprietor to overhead. This will increase the percentage of overhead, and the profit should be decreased accordingly. The idea is that the proprietor should be paid a weekly wage for the work he performs, whether it be with tools, ideas, or by supervision. This is part of the cost of running the business. In addition to this he should get a certain per cent of the total amount of business as his profit for conducting it, otherwise there would be no reward for the risks assumed, and the initiative and executive ability required.

Indefinite Specifications

Returning to the specifications, shown above, it will be noted that they do not state what bathtub is to be used, nor give the name or number of the water-closet combination, the lavatory, or the pipeless heater. With the thought in mind of getting the contract, it has become the rule with such specifications to figure on the cheapest fixtures, etc., for that is what is usually intended; and that was done in this case. An inexpensive bathtub and lavatory were figured on, and one of the cheaper water-closet combinations with imitation mahogany seat; also a pipeless heater that would do the work and which was bought at a low price in half-dozen lots.

This work was being done for a lady who put up several houses each year on speculation. Her work was thought to be desirable and every effort was being made to please her. It was this thought of future work, coupled with the ordinary desire to give satisfaction, that created the attitude on the part of the plumber that made him an easy victim for what followed.

This good lady insisted on an expensive bathtub. It was what she had intended all along. To prove it she brought forth a catalog where she had it all marked out, together with a pedestal lavatory, and a water-closet combination with white seat. The plumber sought to prove his case by bringing forth the specifications, and then he was made to realize for the first time that such specifications really backed up her argument as much as they did his, for while they did not call for the more expensive fixtures, neither did they specify the less expensive ones. He finally conceded everything. And when the time came to install the pipeless she insisted on having a larger one than figured on because it "must be the same size" as the one in a larger house she had built previously.

What Specifications Called For	Amount Allowed	Actual Cost
1—5-ft. bathtub	$ 35.00	$ 57.00
1—Plate P-6800-E sink	22.00	22.00
1—Cement Washtray	15.00	15.00
1—30-gallon range boiler	10.50	10.50
1—Water-back	2.00	2.00
1—Water-closet combination	19.50	24.50
1—Lavatory	14.00	41.00
1—Pipeless heater	80.00	98.50
Roughing material	85.00	83.12
Leaders	8.00	7.66
Labor:		
Total, Man and Helper 7½ days @ $16		
Roughing, 3 days	48.00	48.00
Water pipe, 1 day	16.00	16.00
Washtrays, ½ day	8.00	10.00
Bathroom fixtures, 1 day	16.00	24.00
Setting sink, ½ day	8.00	8.00
Installing pipeless, 1½ days	24.00	16.00
	$411.00	$483.28
Overhead and profit	176.00	
	$587.00	

Not being willing to risk trouble after the heavy concessions already made, this was also conceded. He was rewarded by being given the opportunity to figure on the next house this customer built, and when the same kind of a specification was handed to him he was ready for it and insisted on definite information regarding everything that was to be used. As a consequence his bid was too high and the contract was given to another contractor who was also anxious to get this work, and was thus permitted to purchase a little experience at the prevailing high rates.

Be Sure Specifications Are Definite

When there is a misunderstanding regarding the specifications, and there is room for doubt as to the intent, it is, as a rule, possible to use reason and get the customer to stand half the expense; but you soon learn there is no reason in a customer who is out to get all he can, and who more than likely has set the trap for you. Sometimes you have to take your medicine and charge it up to experience. At any rate you should make absolutely sure you do not get caught again, and you can do this by making the specifications a part of the contract and entering therein any details needed to make everything clear. These contract forms should be made up in duplicate, a copy for yourself and one for the builder. Do not depart from it except with a written understanding. A contract also prevents the practice, sometimes indulged in, of a different specification being brought out after the contract is awarded by the builder who may in-

(Continued on Page 85)

Get these Christmas Posters free!

GIVE HER A 'CLASSIC' FOR XMAS

CHICAGO FAUCETS

Add-A-Shower to Your Family Xmas Gift List!

CHICAGO FAUCETS

These two striking posters are beautifully printed in green and red.

Just the right size—14x21 inches.

They'll attract attention instantly to YOUR window—help you get your share of Christmas business.

Get yours while they last.

Send us a wire or mail the coupon immediately.

The Chicago Faucet Company
2700-22 N. Crawford Ave., Chicago
Send me a set of Christmas Posters right away.

Name.....

Address.....

CHICAGO FAUCETS

In this, the second and concluding installment, the author, Harry Davidson, discusses the lack of apprenticeship training in the plumbing industry and points to the danger of such a situation as concerns the industry's future

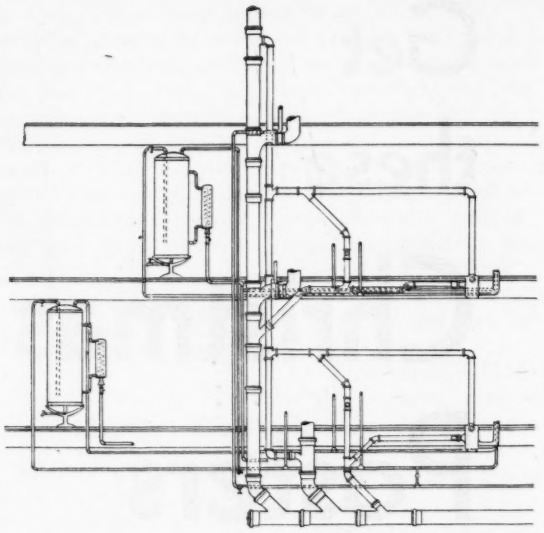


Fig. 1.—A very creditable layout for a two-family house made by a student in plumbing at the Willimantic trade school in Connecticut. It represents one effort to train the master plumber of tomorrow

Training the Master Plumber of Tomorrow

TIME was, and not so many years ago, when the trade school boy was required to put in about nine-tenths of his time in the wiping of joints, and be graduated as something of an expert in this one line, but with most other lines of instruction sadly neglected.

The modern trade school recognizes that the boy must have a far more liberal education than this,

Fig. 2.—The Hartford, Connecticut, trade school is constructing a residence, one elevation of which is shown here, to provide practical experience for the student

DOLE

Offers $1,000.00 in Cash Prizes

Air and Vacuum Valves

A PARROT and Dole Valves!

Both beauties, but we'll just mention that this is the fourth in our series of six coloring contests—planned for young people and those who feel young.

Anyone may enter and we are giving away 325 money prizes.

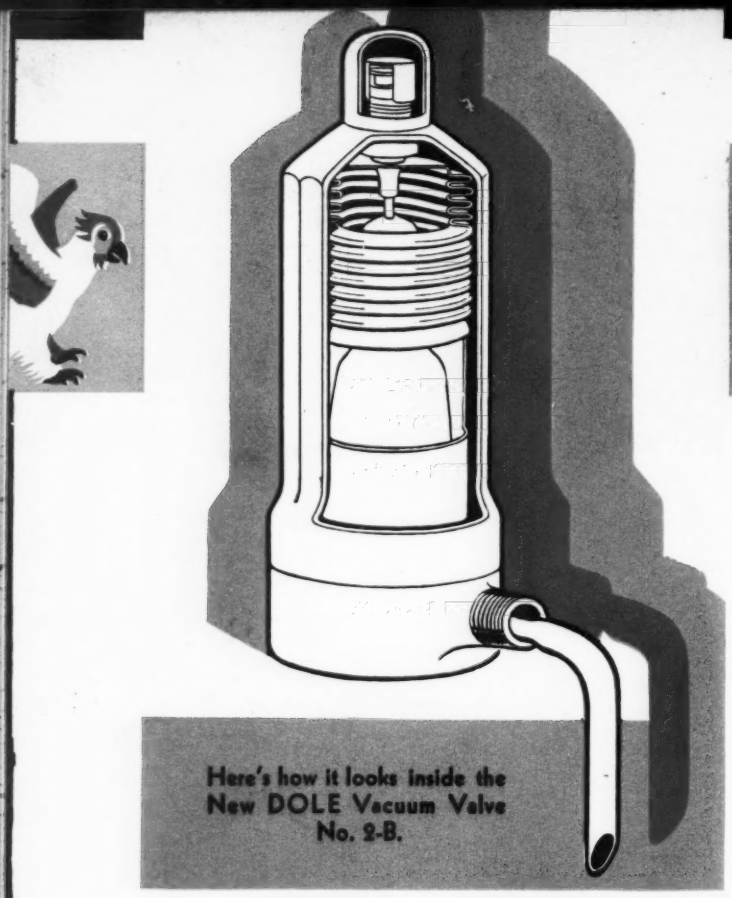
We (manufacturers of air and vacuum valves) ask you, one of The Trade, just one question—Are you satisfied with your profit?

Maybe the difference between your price and list is fair enough but you lack the volume. The money is good but there's not enough of it.

Do you realize that thousands of heating contractors are increasing their sales—hitting new high marks and new profits with Dole Vacuum Valves No. 2-B—list price $4.00.

CONTINUED ON NEXT PAGE

THE DOLE VALVE COMPANY, CHICAGO, ILL.



Here's how it looks inside the New DOLE Vacuum Valve No. 2-B.

PRIZES and RULES FOR THE COLORING CONTEST

These prizes and conditions apply to this, the 4th of the six competitions. Each competition is separate and complete in itself.*

Prizes—1st prize - - $50.00 cash
2nd prize - - $25.00 cash
3rd prize - - $15.00 cash
4th prize - - $10.00 cash
Fifty consolation cash prizes of $1.00 each

The prizes will be awarded for the most attractive and neatest coloring job done on the outlined valve and parrot shown on the reverse page. To insure absolute fairness the Editor of Domestic Engineering, a representative of the Plumbers Trade Journal and two prominent artists—Mr. Ellsworth Young and Mr. Edw. T. Grigware—will decide the awards. Their decisions will be final. No particular skill is required to enter—everyone should try. Names of winners will appear as soon as possible in this book.

Remember, anyone (not connected with The Dole Valve Company) may enter.

Use paints, crayons, or ink—Any color you wish to tint the outlined valve and parrot. The ones we show in color are just a suggestion. You don't have to use the same colors.

Carefully cut out the whole page and send it with your full name, your age and complete address to—

THE DOLE VALVE COMPANY
1931 Carroll Avenue Chicago, Illinois

You must mail the page before midnight, January 10. Entries postmarked later can not be considered. You may send as many entries as you wish for all or any of the six competitions. Watch next month for the 5th competition.

*There will be a special award of one $100.00 cash prize for the best complete series of six—enter each and all of the six competitions. Send them before their closing dates.

NOW, READ THE RULES AGAIN, CAREFULLY.

THE DOLE VALVE COMPANY

1913-1933 Carroll Avenue - - Chicago, Ill., U. S. A.

CONTINUED FROM THE OTHER SIDE

LARGER PROFIT FOR YOU

For performance Dole Vacuum Valves No. 2-B cannot be beaten. They pass every test successfully. They carry a written guarantee for five years. Apartment and home owners who cannot or won't pay high prices will jump at the chance to enjoy the comfort and actual fuel saving of a vacuum valve installation on their one-pipe systems—for so reasonable a figure.

A greater number of sales—properly handled means bigger profit for you.

Dole Syphon Air Valves No. 1 fill every air valve requirement. Listing at $1.50 each they, too, are guaranteed for five years. Money is being made on Dole Syphon Air Valves No. 1. The replacement business is profitable.

As you cut this page out for the young folks, (someone you know wants to try for these cash prizes) remember that there is no money wasted on return trips for replacements and adjustments when you install Dole Air and Vacuum Valves.

Go after business when business needs going after!

Write today for attractive quotations and a supply of literature, showing the complete line of Dole Valves, imprinted, free, with your name and address.

We can show you how to make money and keep on making money with Dole Valves.

Dole

Vacuum Valves No. 2-B
Straight Shank Vacuum Valves No. 6-B
Syphon Air Valves No. 1
Straight Shank Quick Vent Air Valves No. 3-A ⅛"
Straight Shank Quick Vent Air Valves No. 3-B ¼"
Straight Shank Quick Vent Air Valves No. 3-C ⅜"
Quick Vent Air Valves Nos. 8 and 9 (Vacuum) Compound Gauge—4½"

VALVES

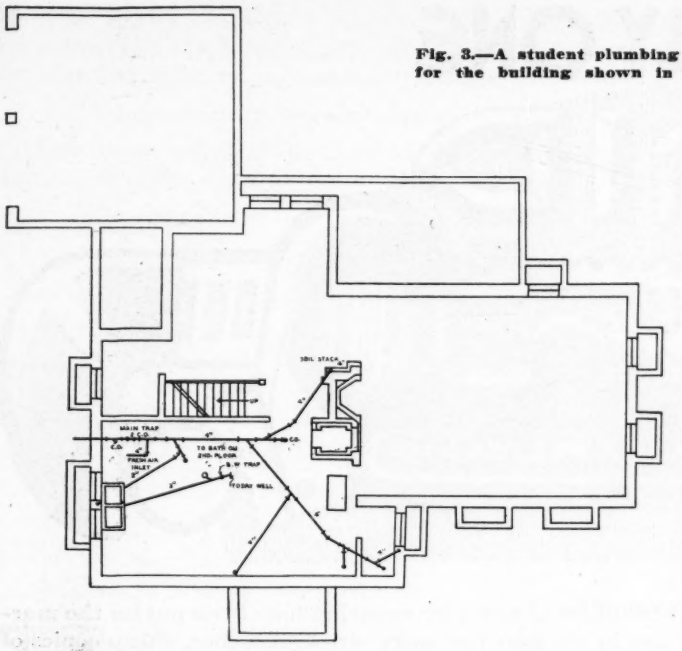


Fig. 3.—A student plumbing layout for the building shown in Fig. 2

and provides instruction in mathematics, physics, drawing, etc. As a matter of fact, the Connecticut State Board of Education requires that trades classes shall devote at least one-fourth of the time to the above related subjects.

In mathematics, the boy studies fractions, decimals, percentage, discounts, proportion, mensuration as it applies to plumbing practice, mechanics, and finally, estimating.

Nothing can do the young plumber more actual good than this training in mathematics. This is one point where the apprenticeship system falls down. The plumber needs mathematics every step of the way, and lack of this knowledge is one of his greatest handicaps, particularly after he gets into business for himself. Many a master plumber today depends on someone other than himself, often the jobber, to figure discounts, to estimate jobs, etc., and this dependence more often than not is because he lacks the ability.

Physics and Other Related Subjects Covered

Likewise is the study of physics of utmost value. It is not sufficient to know or to guess what is going to happen under certain given conditions,—the plumber ought to know what the underlying cause actually is. He has to know this if he is going to proceed correctly.

And then there is drawing. We know of no better method of learning the principles and practice of plumbing than through the development of a knowledge of drawing. Really the subject is indispensable to even a fair educational equipment for the plumber.

Not only does the apprenticeship system fall down in the matter of mathematics, but it is also lacking in the subjects of physics and drawing, just mentioned. The system undeniably excels the trade school training in practical manual experience, but even here the trade school does excellent work, as we shall see.

In an article such as this, it is impossible to present much that is tangible concerning the training in mathematics, physics, shop talks or actual plumbing practice, but it is possible to give you a very good idea of what these trade school boys are accomplishing in drawing, and we are most happy to do this.

Fig. 1 shows a very creditable layout made by a student of the Willimantic trade school. It is a first class piece of work, and shows the complete plumbing layout for a two-family house.

We have already alluded to the fine residence the Hartford state trade school is constructing, and Fig. 2, which is a side elevation, will prove this.

The cellar plan, showing the plumbing concentrated in one section of the residence, is shown in Fig. 3. This layout was made by one of the students.

Division of Time and Work

We learn from the director of the Hartford state trade school that instead of putting only 25 per cent of the boys' time into related subjects, that is, mathematics, etc., 40 per cent is devoted to these subjects and 60 per cent to plumbing practice. We believe this to be an excellent division of time, and that 40 per cent is just about the right amount of time for the related subjects. Under today's exacting demands, the plumber cannot possibly have too much knowledge stored away. Without it his success is greatly limited.

Fig. 4 shows some of the drawing practice the

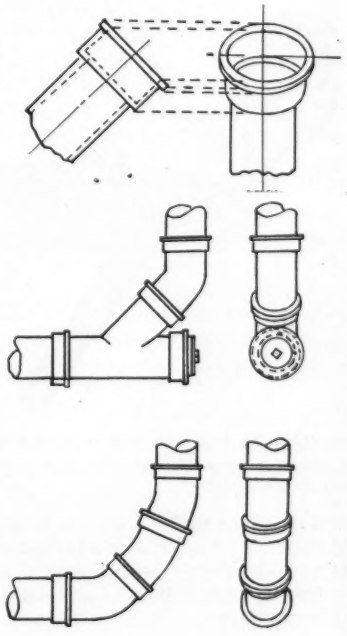
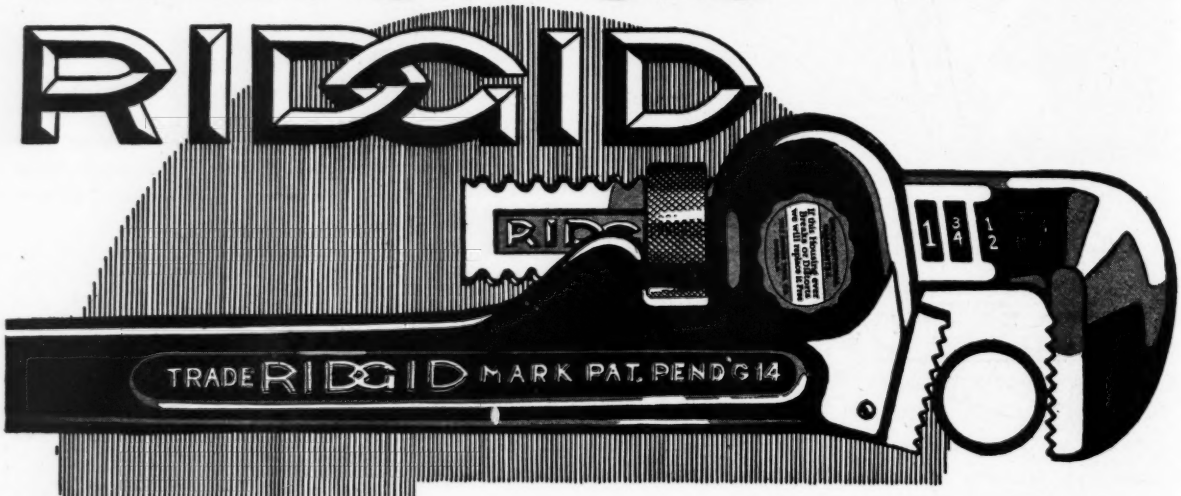


Fig. 4.—An example of the drawing practice which the Hartford student receives

THERE'S ONLY ONE RIDGID



HUNDREDS of new pipe wrenches have been put on the market in the past few years—trick wrenches, cheap copies of the old-fashioned standard pipe wrench and a lot that were "just wrenches."

But there was one good one, the RIDGID—and it won to an important position on sheer merit.

Because plumbers and steam-fitters, oil men and mechanics liked it.

They liked it because it was a notable improvement over old style wrenches.

The housing was guaranteed unbreakable and still is—saves a lot of trouble and expense.

They liked the comfortable and powerful I-beam handle with its hang-up hole in the end.

They liked the adjusting nut, free-riding in its wide open housing, easy to turn even in the 60-inch size.

The handy pipe scale on the hook jaw. The tough hook and heel jaws with instant grip and instant let-go, that wouldn't slip and that couldn't be locked on a pipe. They liked the fact that the heel jaw was easy to replace.

There's only one pipe wrench with these features—and it's the RIDGID. If you haven't tried it, you've been missing a new pipe wrench experience.

Ask your Jobber

The RIDGID is made also in End Pattern for getting hold of pipes in coil work or close to walls.

You'll find that all RIDGID Tools—regular and Super-Six Pipe Wrenches, Vises, Cutters and Threaders—have a host of exclusive features you'll like. Look them over at your Jobbers.

THE RIDGE TOOL COMPANY, Dept. DE., Elyria, Ohio

RIDGID
PIPE TOOLS

Hartford classes are given. These three exercises show front and side views of different soil pipe connections, and represent excellent instruction.

Instruction in Drawing Given

These boys are given instructions in isometric drawing, and Fig. 5 shows the work of one of the

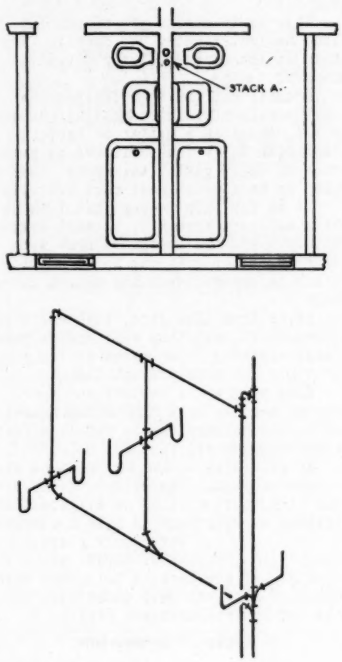


Fig. 5.—Isometric drawing holds an important place in the training program

boys, the isometric elevation being based on the floor plan above it.

Finally, in Fig. 6 is shown a typical elevation worked out by another member of the Hartford classes.

It really seems as if the modern trade school presents more of a solution for some of the ills that we have mentioned than anything else, and we bespeak for the trade school the most cordial, most constructive attitude on the part of all branches of the plumbing trade. With a friendlier attitude toward the trade school, and closer co-operation between the school authorities and the plumbing trade, we certainly would look for remarkable benefits to the trade after a sufficient time had been allowed for such benefits to become manifest.

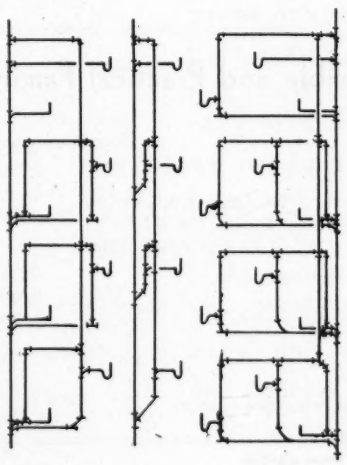


Fig. 6.—A typical plumbing elevation developed in the class work as a means of grounding the master plumber of tomorrow on the fundamentals of the trade

Actual Costs Exceed Estimated Costs

(Continued from Page 78)

sist it is the same specification upon which you figured.

Regarding contract forms, R. M. Starbuck has a simple form of contract on a single sheet of paper that anyone can understand, and this makes it especially valuable because no one hesitates to sign it. There is a space which can be filled in with the essential parts of the specifications; that is, the kind of fixtures called for, number and kind of radiators, boilers, etc. Any additions or exceptions to the specifications should be noted. If more room is required there is a large space on the back that can be used. These contract forms cost very little.

It will be noted that in the contract under discussion the extra expense for the more expensive fixtures and heater amounted to $72.50, and the additional cost of installing, $8, or a total of $80.50. As the profit on the job was only $59, there was an actual loss of $21.50. This was reduced to the extent of $8.22 because of the slight saving in the roughing material and leaders, amounting to $2.22, and the fact that the balance of the labor was reduced $6, because the pipeless was set in one day whereas a day and a half had been allowed.

Errors in adding up your estimates are sometimes responsible for loss. These usually are of ten or one hundred dollars and nearly always in the other fellow's favor or you would not get the job. This is one of the things that cause the heart to skip a beat, especially if for the larger amount, and not discovered until after the contract is commenced.

Reducing your figure to underbid a competitor. You can't believe everything you hear regarding a competitor's estimate. This is a common weapon in the hands of a builder or owner to beat down your price, and a willingness to take his word for it places you at his mercy. The only way to protect yourself is to have confidence in your figures and stick to them.

Trying something new. Every time you do this you may be sure Old Man Experience is getting ready to present you with a bill. If you are doing a certain class of work, you know from past experience how to operate to get the most out of it, and the precautions to take to guard against unnecessary expense. If you must expand and take larger work, be certain you are prepared to do so. This is the rock upon which many a small business has been shipwrecked.

In the next article we will go into the factors which may cause the actual cost of labor to exceed the estimated cost. Every contractor knows how uncertain is the labor figure. Perhaps some of the suggestions to be made, drawn from actual experience, will be of assistance to readers of this business paper. We all know of the common causes, but a repetition even of some of these may serve a good purpose in making all of us more alert in working up our estimates.

RETAIL ADVERTISING SERVICE

Christmas Merchandising

Dear Sir:

This store may be one which you did not think of in making up your Christmas list.

Yet I would like to urge you to consider seriously the things we have to offer as meeting squarely the Christmas spirit of this year. It isn't a year when we are going to give foolishly, although we shall give no less generously than in previous years.

That is why the enduring things here --and the things which offer so much of comfort and convenience to the home--will meet so squarely our desire to give generously but sanely.

Perhaps one can't work up much sentiment over a kitchen sink--but when it has given its years of comfortable service, as compared with the inefficiency of the older type of sink, it will most certainly be among those kindly attentions that go to make up the strong strands of family affection.

And, of course, there are other and less expensive things, but each one designed for service as well as beauty.

If you would like to make a gift that is unique, and lasting, and genuinely thoughtful, we invite you cordially to come in and see our display.

Very truly yours,
HARRY BROWN

A Christmas letter

Plumbing Gifts

If the thought is new to you, it is, perhaps, because you are not familiar with the beauty and the great practical qualities which characterize modern plumbing appliances. We invite you very cordially to see our display.

A small newspaper ad

CHRISTMAS, in the old phrase, comes but once a year—but the gifts you may select in this plumbing store will serve you constantly through many years. That's why we recommend them as eminently practical and so, perhaps, more thoughtful than many other gifts that might be chosen.

(In this space Your Name, etc.)

Dear Sir:

This is to remind you of our invitation, mailed recently, to drop in at our store in the course of your Christmas shopping.

I shall not try to write you the usual sentimental letter on the Christmas spirit, etc. As a matter of fact, I think that while folks will be as generous in their giving this year, they are going to be a great deal more practical.

It is for this reason that I think gifts selected here will be most satisfactory. All the thoughtfulness with which any other gift may be given will attach to any gift you may select in our store.

Aside from that fact, such gifts will be practical, and they will endure beyond almost anything I can think of--as long, certainly, as your present home.

They will serve comfort and convenience, tend to make lighter the household tasks, and perhaps enable you to effect certain economies.

We cordially invite you to pay a visit to our displays. You will be quite welcome--and there will be no slightest obligation on your part to make a purchase.

Very truly yours,
HARRY BROWN

P.S. If you care to telephone before coming, I shall be glad to be here to make any explanations you desire.

A follow-up Christmas letter

Plumbing Gifts

Strikingly beautiful, enduring, thoughtful—these are the qualities that recommend the many things we have which will meet exactly the practical generosity that will feature Christmas giving this year.

A small newspaper ad

Look Over These Eminently Sensible and Practical Family Gifts

For every member of the family, gifts that will minister to comfort, convenience, and economy. Gifts that meet squarely the call for practical things as gifts for this Christmas season.

EXQUISITE, CHROMIUM FINISHED SWING SPOUT FAUCETS MODERN IN DESIGN AND CONVENIENCE

$_____

COMPLETE CHROMIUM FINISHED SHOWER EQUIPMENT READY TO INSTALL.

$_____

BATHROOM JEWELRY IN SETS, WHITE OR IN COLOR, DURABLE AND STRIKING.

Set, $_____

WATER HEATERS, COMPLETELY AUTOMATIC IN COLOR. ECONOMICAL.

$_____

TOILET SEATS, WIDE RANGE OF COLORS. CAN NOT PEEL OR CRACK.

$_____

Your Name, Address and Telephone Number

This unusual ad will attract attention

Heating Gift Copy

There are many things among heating appliances which might be rightly considered as gift possibilities. On both pages, note the stressing of the practical value of gifts chosen in the plumbing and heating store.

Christmas Party
—in the basement

Let your gift to your family be a big new recreation room—made possible by the installation of a modern heating plant. It will reclaim waste space, and afford unending pleasure to the family without the need for leaving the house. May we talk it over with you? Just phone.

In this space Your Name, etc.

A one column ad

If you are looking for the type of gift which will give not only an hour's or a day's pleasure—for a gift that will be, month after month, giving the maximum in comfort and convenience to all the family, we suggest that you look into the displays of Christmas gift suggestions in our store. It is difficult to imagine anything that would so meet the current idea of generous but practical Christmas-giving so exactly as comfort gifts.

Christmas Heating Gifts

(In this space Your Name, Address, etc.)

Here's an unusual ad

Dear Sir and Madam:

Christmas giving this year, so far as we can discover, is going to be no less generous than in previous years, but it is going to be much more practical.

With this in mind, we are making a suggestion that we think will be acceptable. It is this: Bring the heating plant up to date, as a kind of general Christmas gift from the family to itself. Install radiator heat, or if you have it, install those modern control devices which will make your heating plant almost completely automatic--or those which will make it completely automatic.

Perhaps the family would be willing to participate in such a plan. And, of course, the matter may be handled with great convenience under our partial payment plan.

We'd be mighty glad to talk the matter over with you. Phone and I'll call; or drop in at the store. No obligation, of course.

Very truly yours,
HARRY BROWN

A heating sales letter

The copy on these two pages is for the use of readers of DOMESTIC ENGINEERING —with or without the illustrations, as they may choose.

If you are using any of this copy, send us samples so that we may keep in touch. Perhaps we'll be able to offer further assistance.

At any rate, make use of the ads and letters and publicity—they will help create new business for you.

For Christmas this year let your gifts to the family be practical —and we can think of nothing more practical than a modern heating plant, or the modernization of your present heating plant until it is as completely automatic as it is possible to make it. We'd be glad to discuss the matter with you, without obligation.

(In this space Your Name, etc.)

Some interesting copy

Cleveland Heating Contractors

and five manufacturers carry on radiator heating campaign

B. Y. Kinzey, Manager, Heating and Piping Contractors Cleveland Association

Interest centers in effort to develop remodeling jobs in older homes, and in discovery that better returns were received when the co-operative advertising showed definite price for installations in various types of homes

THE sale of radiator heating can be increased in any territory where warm air has a large sale, in the face of a building and business depression. The first nine months of the "Radiator Heating Merchandising and Advertising Campaign" sponsored by the Heating and Piping Contractors Cleveland Association in co-operation with five manufacturers: American Radiator Company, National Radiator Corporation, Pierce, Butler & Pierce Mfg. Corp., United States Radiator Corp. and Weil-McLain Company, shows an increase in the number of radiator heated homes, although there has been a decrease in building.

Here are the facts. A survey made in the fall of 1929 showed that only 16.3 per cent of the homes built in metropolitan Cleveland during that year had radiator heating. The Cleveland Association outlined a complete program for selling more radiator heating and this program was approved by the Trade Promotion Committee of the Heating and Piping Contractors National Association as a test campaign.

Sales Training Is First Step

The first step in this campaign was a Radiator Heating Sales School for members of the industry to learn more effective methods of selling. This sales school started in September and continued until Christmas, with further sales promotion meetings during the spring of 1930. At each session of the school Association Manager Kinzey presented various methods of meeting sales problems while guest speakers from various manufacturers gave practical sales experiences to those attending.

An advertising plan was then submitted to the manufacturers doing business in the Cleveland territory requesting them to finance a $10,000 newspaper advertising campaign on radiator heating. The Association on its part undertook to act as a clearing house, prepare all advertising, follow up all prospects and to conduct a direct mail advertising campaign to the Building and Loan associations, realtors, contractors, speculative builders and prospective home owners in order to build up acceptance of radiator heating.

The five radiator companies already mentioned agreed to underwrite the newspaper advertising campaign and the first advertisement appeared on Sunday, January 5, in the *Plain Dealer* and the *Cleveland News*.

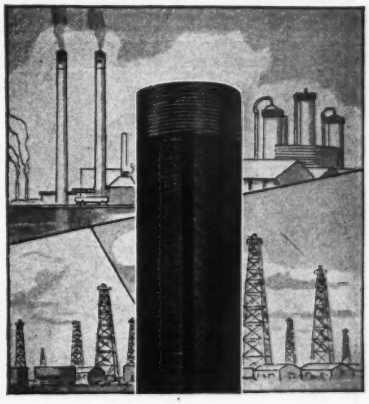
For three months, the comfort of radiator heating was stressed in the advertising and 113 prospects came to the Association, some of which developed into sales. However, the greatest benefit seemed to be from the better acceptance of radiator heating on the part of speculative builders.

Change in Appeal Increases Returns

Believing that many people felt that radiator heating was too expensive, the second three months was devoted to price advertising. In these advertisements, actual homes were featured with the price of the heating plant given. While this advertising was effective with some builders, fewer prospects among home owners were obtained than from the advertisements featuring comfort, and it was decided to switch the campaign to the modernization of homes, at the same time cutting down the amount of space used.

Since June 15, the main theme of the advertising has been modernizing with the comfort and economy of radiator heating stressed. While cutting the advertising space will result in a total cost of newspaper ad-

Remember TONCAN FOR PERMANENCE

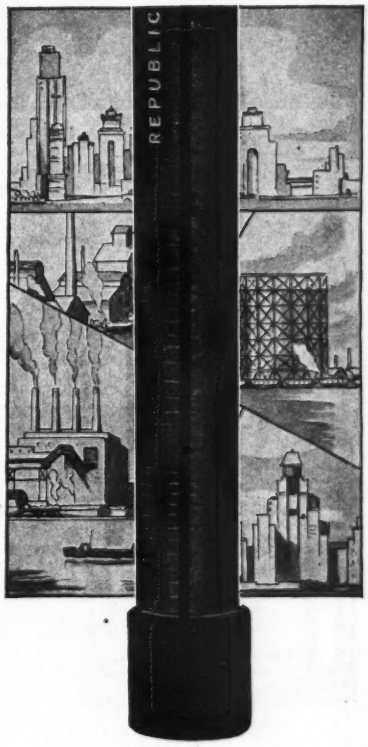


FOLLOW this prescription if you wish to avoid future worry about pipe. Make it your practice, particularly where service is severe, to specify Toncan Iron Pipe—the trouble-free pipe.

It begins to save trouble with its installation, for it is easy to thread or flange or bend. But the greatest benefit of Toncan Pipe can only be realized as the years go by without costly repairs and upkeep.

This alloy of copper, molybdenum and highly refined iron has an extraordinary resistance to the elements that relentlessly destroy most ferrous pipe materials. Toncan Iron is specifically manufactured to withstand the ravages of rust and corrosion. Use Toncan Iron Pipe for Permanence.

Send for the "Toncan Book." It contains full details of the story of Toncan Iron Pipe, its metallurgy, manufacture, tests and uses.



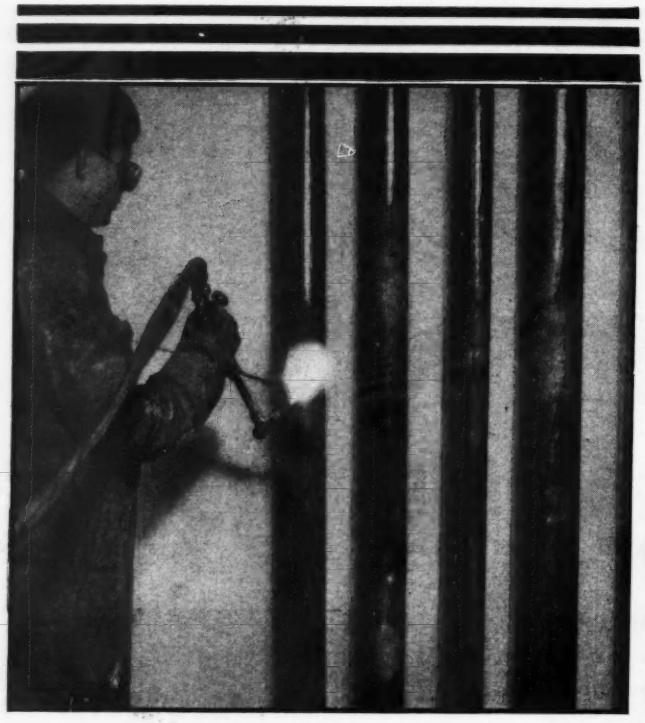
As protection to you we mark it BLUE.

REG.U.S.PAT.OFF.
TONCAN
COPPER
MO·LYB·DEN·UM
IRON PIPE

REPUBLIC STEEL CORPORATION

GENERAL OFFICES YOUNGSTOWN, OHIO

Birmingham Boston Buffalo Chicago Cincinnati Cleveland Dallas
Denver Detroit El Paso Indianapolis Milwaukee Los Angeles New York
Philadelphia Pittsburgh San Francisco Seattle St. Paul St. Louis



ELIMINATING THE WEAK SPOTS

A pipe installation is as strong as its weakest joint. Before the introduction of oxwelding, the joint was the weak spot in any pipe installation. It was at this point that leaks and breaks always occurred.

There are no weak spots in an oxwelded pipe installation. It is uniformly strong and leakproof throughout its entire length. The strength of the oxy-acetylene joint is equal to that of the pipe wall, and will last as long as the pipe itself.

Dependability of oxwelded piping has led to its installation in modern homes throughout the country. Progressive contractors are recommending it—thoughtful owners are choosing it for long and trouble-free service.

THE LINDE AIR PRODUCTS COMPANY . . . THE PREST-O-LITE COMPANY, INC. . . .
OXWELD ACETYLENE COMPANY . . . UNION CARBIDE SALES COMPANY . . .

Units of UNION CARBIDE AND CARBON CORPORATION

General Offices . . . . . New York UCC Sales Offices . . . in the Principal Cities

65 Linde plants . . . 48 Prest-O-Lite plants . . . 174 Oxygen Warehouse stocks . . . 156 Acetylene Warehouse stocks . . . 42 Apparatus Warehouse stocks . . . 245 Union Carbide Warehouse stocks

vertising of but $7,000, the effectiveness of the campaign does not seem to have been affected.

The Association office has received an average of ten to twelve requests for information each week. These names have been turned over to those members of the Association who agree to follow them up promptly and report to the Association.

So far 308 inquiries have been received from metropolitan Cleveland with approximately 100 more outside

Made Cheery Within by Radiator Heat for . . $735
As invitingly warm and comfortable within as it is attractive without because of a radiator heating plant individually designed according to the standards of the Heating and Piping Contractors National Association under the direction of the engineers of this association and installed by a responsible heating contractor.
No matter what the wind and weather conditions, the radiation and boiler is selected to maintain an even, healthful and comfortable temperature.
INEXPENSIVE RADIATOR HEATING
A heating plant is bought for the life of the home. The plant is least expensive which uses the least fuel, which costs the least for repairs and which requires the least attention to operate. Such a plant is possible only with radiator heating because it is individually designed and is constructed of cast iron and steel.
Ask for the booklet, "What About the Heat?"
Heating and Piping Contractors—Cleveland Association
1227 Prospect Avenue, Cleveland, Ohio MAin 1444
Deferred Payments
You may enjoy the comfort of Radiator Heating in your present home immediately and arrange for small monthly payments.
Heating & Piping Contractors Cleveland Assn.
1227 Prospect Avenue, Cleveland, Ohio.
Kindly send me your booklet, "What About the Heat?" as offered in your advertisement.
Name .....
Address .....
P. D.

our territory. Reports have been received from members on 204 of these as follows:

Prospects for immediate sale—79
Prospects for sale within year—51
No prospect—74.

Even in the spring over 50 per cent of these prospects were for modernization work while, since July first, more than 80 per cent have been interested in remodeling.

This clearly indicates the remarkable possibilities in the old home field for the radiator heating contractors of Cleveland.

Of course, business conditions have limited the results of the campaign. The number of residences built in 1930 is 34.2 per cent less than in 1929 and the number of residences costing more than $10,000 to build has been cut from 380 to 284. (This is mentioned because it cut the number of sure radiator heated jobs and approximately $150,000 in radiator heating volume.)

Some Interesting Results

What are the results of the campaign? In the new building field where accurate figures are available from official sources, radiator heating has increased the number of jobs done. Disregarding the jobs which specify gas or stove heat, or have no heating indicated, here are the figures for nine months:

1929—Warm air heating,	1,812 jobs.	Radiator heating,	326
1930—Warm air heating,	1,120 jobs.	Radiator heating,	420
Loss.....	692 jobs.	Gain.....	94

This gain has been possible because the entire industry and particularly the Association contractors have devoted much time and effort to converting the speculative builders of small homes to the use of radiator heating. Of course this has been helped by the demand created in the minds of home buyers through the consistent newspaper advertising. But, the real work on the

These are examples of the ads showing floor plan and price that were most effective

The Garage, Too, Is Heated by Radiator for $745
It's a pleasure to start a car in a heated garage on a cold winter morning. This is another advantage of radiator heating which many home owners enjoy. Radiator Heating is flexible heating. The radiation is carefully computed by National standards to overcome the heat losses through windows, walls and doors in each room and to maintain an even, comfortable temperature under all conditions.
INEXPENSIVE RADIATOR HEATING
With such equipment individually designed for each home, the owner enjoys low cost for fuel and upkeep while having the knowledge that his home, because of an adequate heating plant will command a better loan, and a better market price if it becomes necessary to sell.
Any one buying, building or remodeling should have the information contained in the booklet, "What About the Heat?"
Heating and Piping Contractors—Cleveland Association
1227 Prospect Avenue, Cleveland, Ohio MAin 1444
Deferred Payments
You may enjoy the comfort of Radiator Heating in your present home immediately and arrange for small monthly payments.
Heating & Piping Contractors Cleveland Assn.
1227 Prospect Avenue, Cleveland, Ohio.
Kindly send me your booklet, "What About the Heat?" as offered in your advertisement.
Name .....
Address .....
P. D.

firing line has been done by the member contractors with the co-operation and support of manufacturers' and wholesalers' salesmen.

As this article is written, Cleveland is at the height of the replacement season. Because contractors are busy day and night selling this type of work (and most of the sales work has to be done at night), it has been impossible to get any accurate figures of sales made. However,

(Continued on Page 145)

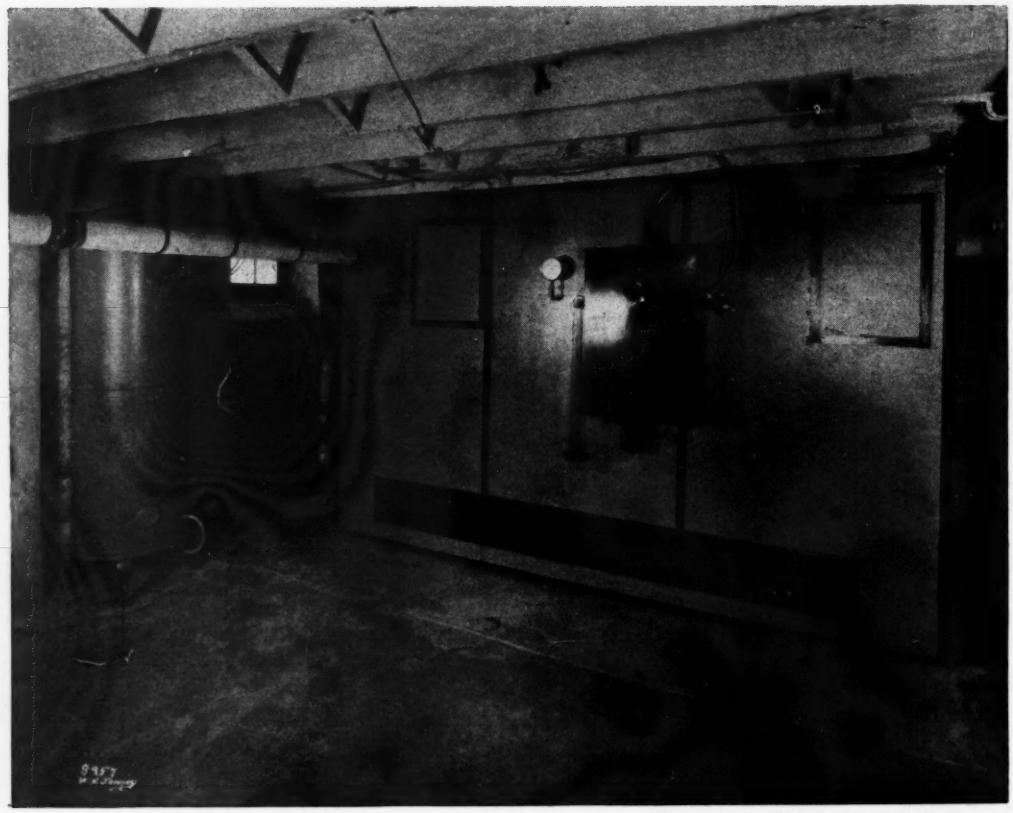


Fig. 1—The entire heating plant is contained in the wall-board compartment. Note the water glass and the pressure gauge. The tank to the left is an electric water heater

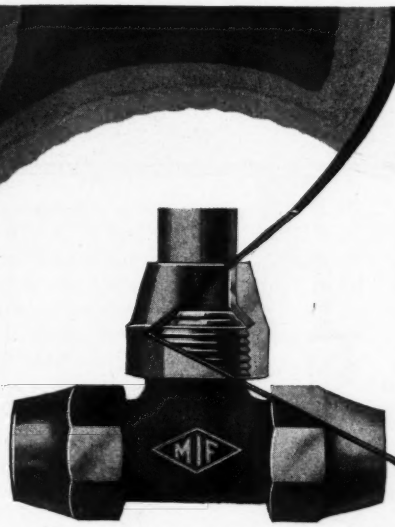
You Can Now Install Electric Heat In New And Remodeled Homes

By M. A. THOMAS

SUPPLEMENTING provisions for lighting and cooking, electric service for domestic water heating and house heating is today as available for the most distant suburban estate as for the town house. The supply of "fuel" is drawn from the power lines daily when the demand on the Power Company's station is lightest. Most power companies have periods in the 24 hours when their equipment is not loaded heavily because their regular customers have no need for power at these hours. These are off-peak periods. They are not revenue producing unless a load can be found that, being automatically controlled, will fit into these periods. Such a load may be created by electric house heating installations.

What Is Off-Peak Electric Heating

The off-peak feature of electric heating may be observed in the load curve diagram Fig. 3. The cross-hatched section denotes the demand upon an average power company's generating equipment in any 24 hours. Thus, from 6:00 a. m. to 8:00 a. m. the heavy morning load of trolleys, etc., causes a peak in the curve. At noon there is a sharp decrease in load until the afternoon peak begins to build up, reaching its climax between the hours of 4 p. m. and 7 p. m. The greatest demand, 8,500 KW, in this particular example (which is quite typical of power companies generally except where special manufacturing loads exist) is at 5:30 p. m. and necessitates the mainte-



M|F

COPPER TUBE FITTINGS

HALF THE TROUBLE — TWICE THE SAFETY

M. I. F. Copper Tube Fittings are so easy to install that you cannot help but save money whenever you use them.

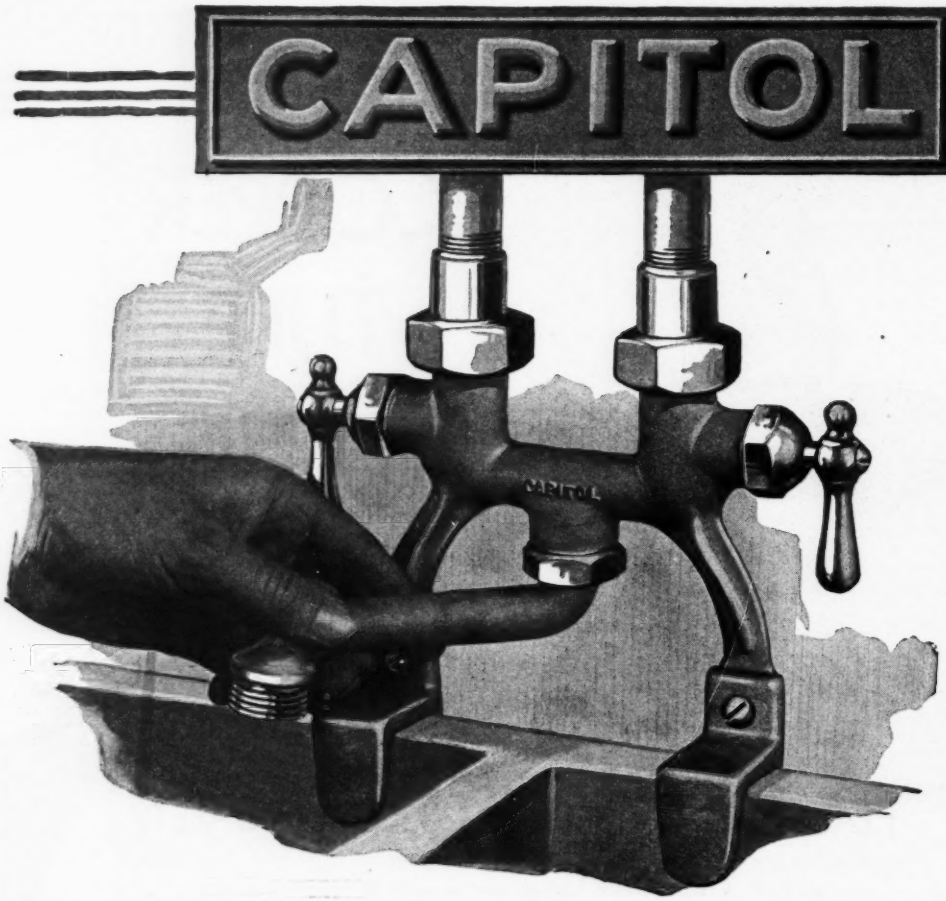
They go on the line RIGHT the first time and, due to their simple design, featuring the double forty-five degree seats, the tubing does not have to be cut at a perfect right angle in order to make-up tight.

Due, also, to the fact that the tubing does not have to be flanged at a more acute angle than 45 degrees, there is very little possibility of its fracturing.

Two point contact prevents leaks and withstands shocks and pulls. M. I. F. Adapters allow a greater range of work with a third as much material. All in all there is half the trouble for twice the protection.

Ask your jobber to show you M. I. F. Copper Tube Fittings. Write to us for any special information you may need.

MALLEABLE IRON FITTINGS COMPANY
BRANFORD CONN.



Capitol
No. 420

Combination Laundry Faucet

Here's a faucet made by one of the pioneer manufacturers of combination fixtures, the construction of which has recently been modified so as to allow for adjustment at the point where tub clamp fastens to faucet. The tub clamps are reversible. The unions are of heavy ball plated pattern absolutely trouble proof. The spout is long and will throw water well out into tub. *Also made extra long for three part tubs.*

The Capitol No. 420 is made entirely of brass and is rough nickel plated all over. An article which is finished a bit better than would seem necessary and

MORE ATTRACTIVELY PRICED THAN EVER!

Wholesalers:

Before placing another order for Combination Laundry Faucets be sure to ask for quotation on this Capitol No. 420—you'll find a pleasant surprise awaiting you.

Bohn Aluminum & Brass Corporation

CAPITOL BRASS DIVISION

MANUFACTURERS OF BRASS VALVES, BOILER TRIMMINGS AND PLUMBERS' BRASS GOODS

DETROIT~MICHIGAN

nance of generating equipment of at least 10,000 kilowatt capacity to permit of some leeway for load fluctuations. As long as this peak demand is not exceeded by introduction of electric heating load, the power company is in a position to sell more energy without installing additional generating capacity, and in doing so increases the efficiency of its generation by operating its equipment more constantly at its normal load level. For instance, a single 10,000 KW generator will operate at its greatest efficiency at, say 8,500 KW, and at its lowest efficiency at 2,500 KW. Thus, the curve that shows a demand nearest 8,500 KW for the longest period is the most desirable. The curve ABCDEFGHA represents this new load which never exceeds the maximum of the original load yet provides a more even demand upon the equipment while increasing the revenue about 32 per cent from sale of additional power at a lower rate. The electric heating load in this case would be regulated by time clock to cut off at 4 p. m. and stay off until 9 p. m. In other cases an additional cutting off at 7:30 a. m. is necessary for two hours, because of the heavy morning peak. The off-peak load hours vary with the power company's individual load curve, and may range anywhere from 8 hours to 19 hours as in this example.

How Electric Heating Is Accomplished

Home heating may be classified roughly under four headings:

a. The hand fired coal boiler.
b. The gas or oil installation.
c. Metered heat supply from a central point.
d. The home equivalent of central heat—a supply always available to be drawn upon instantly by thermostatic control.

The electric storage system falls in the last class. A water storage tank, in the cellar, is heavily insulated with mineral wool. During off-peak hours electric current is passed through immersion electric heating elements inserted in the tank near the bottom until water at the proper temperature fills the tank. The tank is designed to be of sufficient size, on each job, so as to store a quantity of high temperature water that cannot be exhausted by the demands of an extremely low-temperature day. Off-peak charging during each 24 hours restores the tank to its full storage condition daily. A precise thermostat controls the flow of the stored water in the radiation system. It is so designed that it prevents room temperature over-travel, and maintains the house at a very even temperature. To provide a cool house for the sleeping hours and to automatically bring the house up to temperature in the morning at a predetermined hour, the thermostat is linked up with an electric clock mechanism, which is part of the control system.

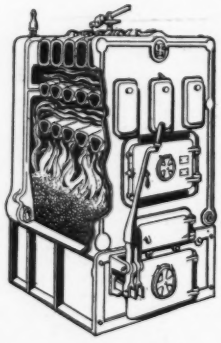
A home equipped with a two-pipe steam or vapor heating plant, or hot water heating system, may

(Continued on Page 151)

Fig. 2—The fuel line in electric heating is the vertical pipe seen in the middle of the picture

Burnham Boilers

Here Is Pay Dirt That Never Fails To Pan Out



This Burnham long fire travel makes its short coal bills. Equally effective with gas or oil.

You know that the average effective life of a boiler is around fifteen years or so. After that, and often before, a new boiler will make a distinct saving in fuel.

So why go digging for new business exclusively, that may or may not pan out profitably, and neglect this rich replacement pay dirt, lying right at your door?

The Burnham, with its extra long fire travel, easy shaking and cleaning arrangements, and with its handsome, practical colored jacket, will nudge out many a boiler that has years of service still in it.

What can't you do with a boiler like that to back you, in replacing the worn out boilers that are due for replacement right now.

Write for the Burnham Catalog of long fire travel boilers for every heating purpose. The ones that make the short fuel bill.

Send for our special prices on Flue Cleaning Brushes

Burnham Boiler Corporation

IRVINGTON, N. Y.

Representatives in all principal cities of the United States and Canada

Fig. 1—A view of the completed houses in the model suburb in Breslau, Germany

German City Tries American Methods

and now

Heat, water and laundry service are furnished from a central plant.

Laundry service has been speeded up from three weeks to one day.

Underground pipes from the central station heat the basements through which they pass.

By LESTER L. SCHNARE
American Consul, Breslau

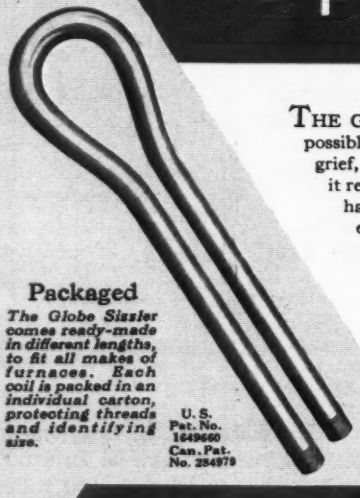
THE city of Breslau, in southeastern Germany, arranged an exhibition during the summer of 1929 called the "Dwelling and Workroom Exhibition," the purpose of which was to stimulate interest in modern building designs and in modern house and office arrangement and equipment. For purposes of illustration and experiment, a small model suburb was constructed of permanent buildings which were rented or sold after the exhibition was over. This suburb consists of three buildings containing small flats or apartments, a kindergarten, a block of two-story houses, each having a small garden in front, several duplex houses, four detached and three semi-detached houses, and a large apartment house.

A number of architects shared in the designing of these buildings, each being assigned several structures to design and arrange according to his own ideas within certain prescribed limits.

Central Heating Equipment

One of the experiments that is being made in this suburb is the furnishing of heat, hot water and laundry service from a central plant in one group of buildings. This group includes four apartment houses containing, in all, 50 two- to four-room apartments, each with kitchen and bath, a kindergarten, and a block of thirteen small houses of from three to five rooms with kitchen, bathroom and cellar, each. The apartments in this suburb contain from 45 to 62 sq. meters of floor space, each,

"It won't take us long to put in a GLOBE SIZZLER ... and you won't need to put out the fire."



Packaged

The Globe Sizzler comes ready-made in different lengths, to fit all makes of furnaces. Each coil is packed in an individual carton, protecting threads and identifying size.

U. S. Pat. No. 1649660
Can. Pat. No. 284979

THE Globe Sizzler, a patented, one-piece furnace coil, really makes it possible to give surprising service on furnace coil jobs. It eliminates the grief, and enables you to do a better job. It's no trick to put one in, and it really isn't necessary to let the fire go out completely. Besides, you do not have to stop other work to make up coils. That, and easy installation, enables you to make more money on such jobs.

Besides, the Globe Sizzler gives satisfaction that lasts. Its patented bend gives greater heating surface, and assures free, noiseless flow of water, always in a horizontal or upward plane. A one-piece coil, it contains no pockets to clog or lime up.

Why not give your customers the best, especially when you can make more money for yourself in doing it? Find out about this new method of putting real profits into furnace coil business. Send the coupon, and we will fire back complete information about the Globe Sizzler.

GLOBE MACHINERY & SUPPLY COMPANY
DES MOINES, IOWA

GLOBE SIZZLER
THE ONE-PIECE NO-POCKET FURNACE COIL

GLOBE MACHINERY & SUPPLY CO.
DES MOINES, IOWA

I am interested in eliminating the grief from furnace coil installations and in how to get more profit from them. Please send me complete information about the Globe Sizzler.

_____

_____

_____

DE-12.

and the houses from 86 to 94 sq. meters, each, except the largest one, which contains 149 sq. meters. (Approximately 0.3 meters equals one ft.) They are all constructed for the occupation of small families who can afford to live comfortably but not expensively and who would prefer to have as little help as possible. The maximum of comfort and convenience, with the minimum of cost and effort, has been the aim.

Location of Plant

The heating plant is situated in the basement of the most central of the three apartment houses. Pipes for steam and hot water run underground to the basement of each of the other apartment houses and through the basements of the houses in the neighboring block. In these basements the steam mains are run along the walls of the cellars, about 3 ft. from the floor, resting on brackets or iron supports fixed in the masonry. The hot water pipes are hung from similar supports just above the steam mains. Both are heavily insulated; but enough heat still escapes to keep the cellars warm, enough to prevent freezing in the coldest winters. A pump at the plant keeps the hot water in circulation constantly, so that it is available in any dwelling on the circuit at a mo-

Fig. 2—The idea that small dwellings should be fully equipped with plumbing fixtures in bathrooms and kitchens is something new in Breslau, Germany, and has caused considerable comment

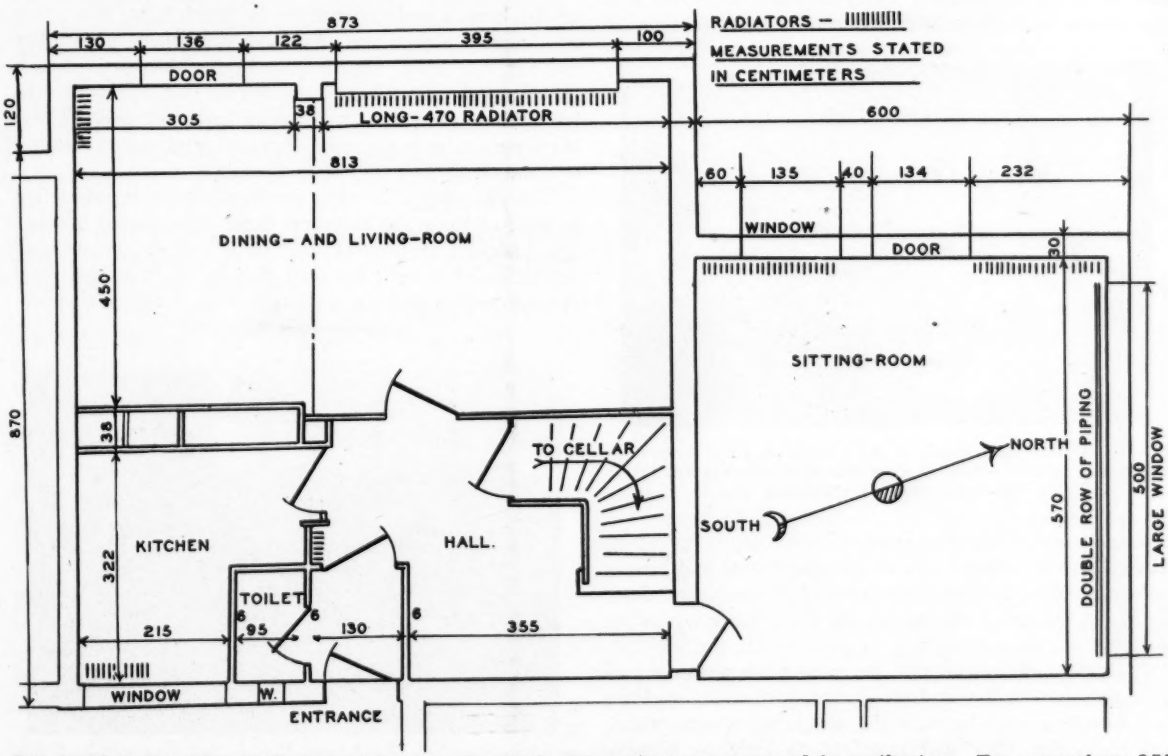


Fig. 3—First floor plan of the largest house in the block. Dimensions are expressed in centimeters. For comparison, 2.54 centimeters equal one inch

ment's notice merely by turning on the faucet between the hours of 6 a. m. and midnight. A small meter, attached at the point where the supply pipe for each house or apartment leaves the main pipe, measures the amount of hot water used.

Since all of the houses and apartments in this group

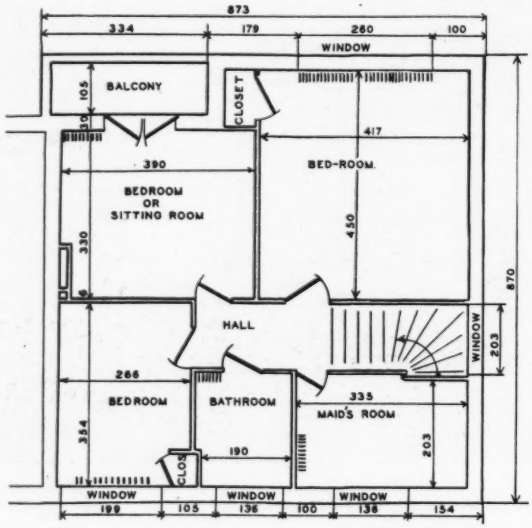


Fig. 4—The second floor plan of one of the houses. The fixtures which were installed are similar to those in common use in this country

are provided with an unusually large amount of window space, one of the problems has been to provide adequate heating without interfering materially with the appearance or use of the rooms. Many of the apartments, and one of the houses, contain windows each consisting of

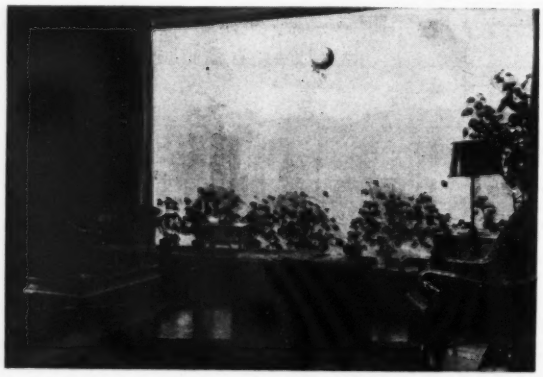


Fig. 5—Interior view of one of the houses, showing large window from within. This window has two steam pipes below and one above for heating

a single pane of glass measuring 7 or 8 ft. in height by 10 or 12 ft. in length. All of the apartments and houses have numerous casement windows each measuring about 2 ft. by 4½ or 5 ft., of which 3 to 6 are often set side by side in one room. To provide for the satisfactory heating of these rooms, an extraordinary amount of radiation has been supplied. Long, low radiators have been used, placed beneath the windows, where practicable, so that they will interfere as little as possible with the appearance or use of the rooms.

The large, single-pane windows are set so near the floor as to make the use of ordinary radiators beneath them impossible; so two rows of steam piping, about one and one-half inches in diameter, have been run horizontally below, and a single length of a smaller steam pipe above each window to counteract the heat loss from them.

The heat consumed in each dwelling is measured by a thermo-electric meter which registers the actual heat given off by the radiators.

The community laundry is located in the basement near the heating plant. It is operated by the owners of the property. Laundry taken to the plant in the morning may be brought home in the afternoon dry, but not ironed, providing laundry service that is considered marvelously rapid here, where the usual time required by a public laundry to return a wash is three weeks and where delivery within a week is considered rush service.

These community services are made possible by a provision in every lease of a dwelling in this group which obligates the renter to pay a certain minimum amount each month for heat, hot water and laundry service, and promises, for this payment, the delivery of a stipulated amount of service. Any delivery in excess of the quantity stipulated must be paid for at the same rate. Thus, a house containing about 150 sq. meters of floor space is charged the equivalent of about $4.10 per month, or about $50.00 per year, for an amount of heat that is calculated to be sufficient for a normally cold winter; $2.50 per month for 60 cubic meters of hot water; and $1.80 per month for about 19 kilograms of dry laundry, which figures out at about four cents per pound. Smaller dwellings have proportionately smaller charges.

Gas is required only for the gas ranges in the kitchens of the houses and apartments to which heat, hot water and laundry service are furnished, since there is no other use for it in these dwellings. In the detached houses, an automatic water heater, heated by gas, is installed to supply hot water for kitchen and bathroom use. These houses also have separate furnaces and steam heating equipment.

The gas ranges installed in the kitchens are designed to bake and roast at the same time. The patent burners are designed to prevent flare-back and explosions and are made of a light material that is easily cleaned and is expected to last an unusually long time. A photo-

(Continued on Page 146)

Fig. 6—Another interior view of one of the houses, showing the radiator installation under the long window

Letters to the Editor

Why the Instruction Tag?

To the Editor:—

If the average man, who is installing a gas appliance, were to answer the question, "Why the instruction tag?" he would say that it was simply an annoyance; that manufacturers would do much better to forget the placing of these instruction tags as an attachment of the appliances; that the installer knows better than anyone else how the material should be introduced into the ultimate consumer's home; that the manufacturer cannot possibly know the methods in use in all parts of the country and hence the installer would recommend the absolute abolition of this hindrance to good work.

The manufacturer, however, feels quite differently. His experience and skill and the knowledge he has gained from shipping his products all over the country are concentrated in these instruction tags. He knows that if these instructions are followed, there will be the sort of installation which will be satisfactory to the ultimate consumer, to the plumber and to the manufacturer.

Following the instruction tag makes the work of the plumber much easier, in that he does not have to puzzle out the best way for doing the work. It is all laid out for him in advance and, therefore, his task is that much easier. Furthermore, the appliance is much more apt to be correctly installed if these instructions are followed than if the plumber is left to his own ingenuity. In the third place, the plumber is not so apt to receive complaints of faulty work from either consumer or manufacturer, if he follows the manufacturer's directions. In following these directions, he places the burden upon the manufacturer, where it belongs and is paid just as much for his work as if he had worked out the plan of installation for himself.

This pointer is particularly pertinent at this time of the year when plumbers are installing many gas appliances. An examination of complaints from customers reveals the fact that a majority of appliances, which are not operating satisfactorily, are in this condition as the result of faulty installation work and usually the result of disregarding the instructions.

As an example of what we have in mind, we offer the following:—In one instance, it was found that the plumber had used a lead hose connection of the approved type, but instead of connecting it to the gas line first and then connecting the other end which is equipped with a union to a heater, he did the reverse. This, of course, resulted in losing entirely the value of the union and, further, a twist was put in the lead hose that practically cut off the gas supply—resulting in the customer complaining that the heater wasn't proving adequate.

Another instance is found in the case of the man who, after installing a heater, left the needle valve adjustment screwed up so tightly that it practically cut off the gas supply. Because the instruction tag had been removed, the customer did not know what to do to make this heater function properly.

On another occasion, the plumber failed to ascertain whether the full gas supply was being delivered to the heater. Upon checking the matter up, it was discovered that the key valve had practically cut off the entire gas supply.

Other cases have been found where broken and leaky valves were the result of the installer swinging on these small and rather fragile fittings with a large wrench of the type that would be used on a 3-in. or 4-in. pipe.

It is, of course, possible that these instruction cards do not meet all the situations. In such cases, it would be to the installer's advantage, whether he be plumber or other gas fitter, to get in touch with the manufacturer and make sure that the instructions are to be followed out literally.

Chicago. Leon H. Curtice,
Managing Director,
National Gas Appliance Mnfrs. Assn.

A Remodeling Problem

To the Editor:—

QUESTION: If people are unable to build new homes for lack of cash or lack of nerve, where are they going to obtain the two requisites for a large remodeling campaign? (Signed) S. H. (Connecticut).

ANSWER: We should enjoy listening to your answer to your own question, as we feel that you could reply to it.

We find no evidence of there being any lack of cash for building projects of merit. Holders of cash are naturally more concerned now than ever about finding places to invest their funds. Certainly the speculative type of building is in disrepute and for the ultimate good of the industry that is a hopeful rather than a discouraging sign.

There is considerable evidence that those factors serving the building industry have been educated to think of building almost altogether in terms of new work. More people, including such agencies as building and loan associations, are beginning to appreciate the tremendous total represented by replacements, repairs and remodeling.

Instead of a temporary expedient to meet the crisis, our studies indicate that remodeling promises a regular and possibly more profitable outlet for plumbing and heating materials.

We know of one hotel owner who gave a contract a couple of weeks ago for extensive remodeling of his hotel. He met the contractor with the statement that "I hate to spend this money, but I cannot afford to wait any longer as my rooms are unoccupied because of the lack of plumbing and heating conveniences."

Only a year or so ago, all of our economists united to tell us of the great reserves of cash which industrial companies and individuals had accumulated for just the emergency we are passing through. It seems hardly likely that, having been prepared for this emergency, these reserves are now unavailable for worthwhile construction.

We find that many of our contractor readers are getting business. Similarly, some wholesalers and manufacturers are finding it. This leads to the question of whether it is the prospective customer who lacks nerve. More likely, some salesmen in our own industry lack this essential quality.—THE EDITOR.

Stoker Installation Does Double Duty

(Continued from Page 49)

began smoking very badly. The customer was naturally very much dissatisfied, as smokeless operation was one of the major points he wished to secure. The contractor, noticing the large amount of ash, blamed the coal. The coal man was called in, and quite naturally blamed the machine. The customer grew disgusted with the mess, and finally threw the stoker out entirely.

A year later, a salesman for another stoker came along, and convinced this man that all of his previous trouble had been due to faulty design in the other machine. The customer finally purchased the salesman's stoker, and this second machine was installed properly. As a result, it gave very satisfactory service, and is still in operation. The customer, of course, is convinced that the first machine is no good, when as a matter of fact it would have given him just as good service as the second machine if the retort had been set down the proper distance.

Our third point, concerning foundations and setting, refers more directly to the boiler and its various structural surroundings, than to the stoker itself. Practically all stokers of the underfeed type are built as a self-contained unit, and require no special foundation upon which they are to be placed. If other conditions are favorable, a stoker may be set directly upon the ordinary concrete floor, and will seldom even require bolting down. Of course, the retort and connecting coal-feeding tubes and air ducts are bricked solidly into place in the boiler. This will usually provide all the stability that is needed for the machine. The setting of the boiler and its foundation may, however, provide a number of variable factors which may affect decidedly the labor required for installation, and hence the price which the contractor should secure for a profitable installation.

Setting the Stoker in a Pit

The factor which is likely to cause the greatest variation is the pitting of the stoker; that is, the building of a pit below the regular floor level in which the stoker is to be placed. A pit is required whenever the boiler room floor level is such, in relation to the grate and crown sheet level, that the retort will be too close to the crown sheet if the stoker is placed directly at the floor level. As was explained above, it is vitally necessary to have sufficient space above the tuyere blocks to permit proper combustion. It is also good practice to locate the top of these blocks on a level with the old grates. Stokers are fairly well standardized with a dimension of from 14 in. to 24 in. from the retort footing to the top of these blocks, depending upon size and make. This means that there must be a similar distance below the grate level, to the foundation level upon which the stoker is to stand. There are many instances where this foundation level does not coincide with the boiler room floor. An occasional instance will be found where the floor is considerably lower. In such cases, the problem is very simple, as it is only necessary to build a concrete block and place the stoker on it. In a much greater number of instances it will be found necessary to dig a pit below the floor level in order to get the stoker in its proper location. It has been found in Chicago, for illustration, that for weeks at a time, better than fifty per cent of the proposals made will contemplate a pit for the stoker. This point is emphasized in order to show the importance of considering this factor before any installation price is computed.

Difficulties to Avoid in Building a Pit

The requirements as to pits differ so widely that every proposed installation must be considered on its own merits. Pits may run, in depth, from four inches to as much as thirty inches. They may vary in area from four to five square feet to a maximum of fifty or sixty. And any contractor of experience can readily visualize the conditions which might be encountered in sinking a pit in a boiler room floor. The floor itself may offer the first problem. It is not uncommon to find boiler room floors made up of heavy concrete slabs, as full of steel reinforcing bars as a fish is of bones. It costs money to cut a hole in such a slab, and it costs more money to line the pit with concrete of a strength approximating the original. Then there is always underground piping to consider. If a drainage line is encountered when the pit is excavated, an expensive changeover may be necessary.

Still another source of trouble may be found in water conditions. Boiler room floors are not infre-

Advice is that a stoker was to be installed in the tall building shown at the left. The out-of-town contractor who took on the work overlooked the fact that the boilers in the basement were below the river level, shown in the foreground. A pit was necessary and he got no farther in the installation than the punching of one hole through the waterproof floor

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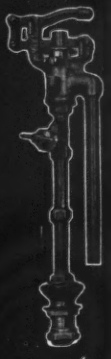
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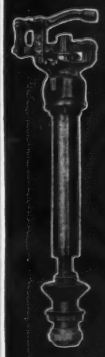
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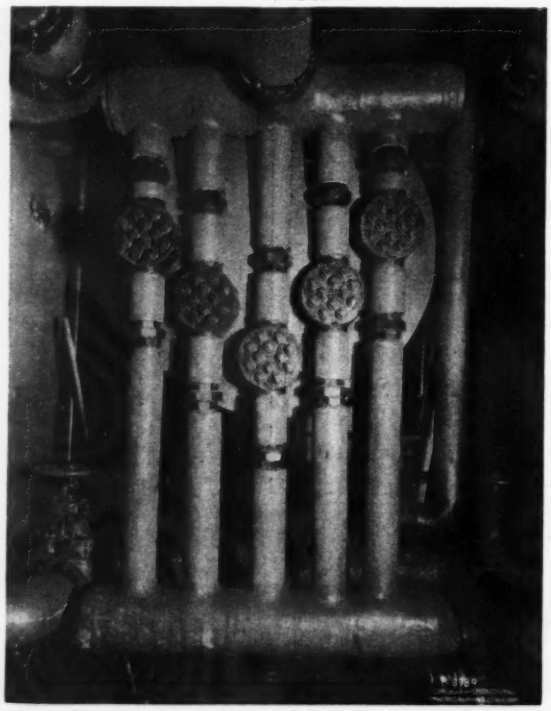
quently at the lowest level of the building, with the water table anything up to forty feet above. It is a nasty job to break through a waterproof slab, and may be a nastier one to seal the pit up again. A striking instance of this occurred in an office building located on Wacker Drive in Chicago. An out-of-town stoker manufacturer secured a contract to install three stokers in this building, at what he thought was a remarkably good price, but which was nearly two thousand dollars lower than any of the local agencies had bid. This manufacturer turned the job over to a local contractor for installation. An eight inch pit was specified. When the contractor's men chopped through the floor, they started a very healthy artesian well. It was not until fifteen hundred dollars had been spent in shutting off the flow of water that the contractor realized fully the significance of the building location. Wacker Drive parallels the bank of the river, and the boiler room of this building was twenty-five feet below the river level.

Structural members below the floor level may also be troublesome. An instance of this was encountered in an apartment hotel in the Wilson Avenue neighborhood. Two stokers were to be installed, and the boilers were of such a design that it was necessary to place the retort and dead plates at the bottom of the water legs. To do this required a pit thirty inches deep. It was known that a steel column was located between the two boilers, and four feet in front of them. The pit was to extend only three feet, so no trouble was expected in connection with the column. When excavation was started, it was found that the column was supported on a pyramidal or spread footing, the base of which extended into the proposed pits. The owner would not permit this footing to be disturbed to any extent, so it was necessary to narrow up the pit to the smallest dimensions that would permit the machine to be placed in it. It happened that the fan was located on the side where the pit wall was narrowed, and when the stoker was set, there was less than two inches clearance between the side of the fan intake and the concrete wall. This was considered ample, until cold weather came on and the stoker began operating close to capacity. It was then found that the restricted fan intake cut down the air flow to such an extent that the machine could not be forced beyond ninety per cent of its rated capacity. The machine had originally been figured so close that this loss of ten per cent prevented its carrying successfully the cold weather peak load. It was ultimately found necessary to remount the fan in a different position at considerable expense, before a maximum supply of air could be delivered.



The battery of submerged water heaters with headers at the top and at the bottom. The boiler water circulating connections and valves at the bottom are also shown

It is sometimes possible to raise a boiler for a stoker setting, rather than to sink a pit in which to place the machine. A prospective remodeling job may be encountered, where the mains and returns need some overhauling. In such a case, the boiler may easily be raised from six to twelve inches, and thereby permit a stoker to be installed at floor level. There are also instances where the boiler risers and headers can easily be shortened up the required distance, and the boiler raised bodily to make room under it for the stoker. Any qualified heating contractor will know when such changes are possible, and such a possibility should always be investigated when a stoker pit is recommended. Examples are not infrequent, when stokers are handled as an exclusive specialty, in which expensive pits have been figured on because a cursory examination showed the boiler returns to be running for some distance at the water level. A heating man would know that a condensate return pump would not only permit the boiler to be raised, but would probably also improve the circulation of the system over the gravity return. And in many instances, the cost of the pump and the exchanges would be much less than an expensive pit for the stoker.

Boilers with brick settings also offer their own problems. When a stoker is installed in a brick-set job, it is even more necessary to have the setting air-tight than it is with natural draft. Boilers which have been operated two or three seasons, or longer, will almost invariably develop cracks and air leaks. When the positive pressure of the stoker fan is turned into such settings, the resulting loss of pressure may have serious effects. If the stoker is to operate as expected, these conditions must be corrected, and the expense of doing this should always be a part of the original estimate. It may also be found that the changes in the brick work which are necessary in removing the old grates and installing the stoker may amount to a considerable sum. Many heating contractors have had little or no experience with brick settings. In case a remodeling job involves a boiler

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12 sizes and styles.
For open-tank or pressure systems.
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50 different outfits. V-Belt, silent chain, or flat-belt drive. 4-in., 6-in., or 8-in. stroke. Single- or double-acting cylinders. All bearings bathed in continuous flood of oil by Gear Mesh Lubricator. (Patent Pending.) Tightly enclosed crank case holds six months' supply of oil. Shock and wear minimized by air chamber which acts as shock absorber. Smooth, even flow of water obtained by differential plunger.

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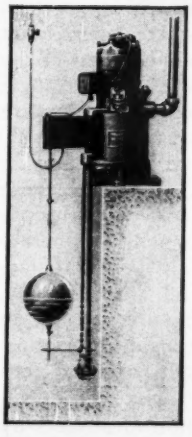
The Minute Man Cellar Drainer Keeps Cellars Dry



Complete outfit includes ¼-h.p. motor; 8-ft. lamp cord; circuit breaker; foot valve; 3-ft. suction pipe; float switch. Capacity, 5 to 25 g.p.m.

Now's the Time to Sell Cellar Drainers

THE season for cellar drainers is here. Insure your customers dry cellars by selling them the "1776 Minute Man" Cellar Drainer.

The Minute Man is fully automatic. Shaft is fully enclosed and packed in grease. Self-priming centrifugal pump with bronze impeller and stainless steel shaft. Attractively finished in bronze and black.

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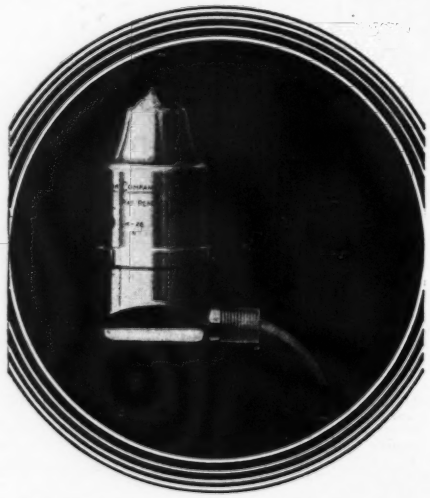
When you get
THIS COMPLAINT

"my radiators won't get hot"

install
AIRID AIR VALVES



This is the season of complaints to heating contractors. And most of them come from people who are not getting enough heat. In a great many cases the cause is very simple—cheap inefficient air valves. Replace them with Airids (either No. 500 for steam or No. 510 Vac-Airid for vacuum) and you put an end to complaints. Airid Air Valves can be depended on to let the radiator do its work efficiently.

IN-AIRID
The Invisible AIR VALVE

No. 1 for Steam No. 2 for Vacuum

1 That must be installed by a steamfitter.
2 That is inside the section and beautifies the radiator
3 That cannot be stolen or tampered with.
4 *That vents all the air from new type steam radiators.*

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of this type, it is always wise to have this part of the work checked by a specialist in boiler refractory work.

Co-ordinate Electrical Devices and Connections

The electrical characteristics are also much safer in the hands of a specialist. Most stokers have two sets of electrical wiring, the control circuits and the motor power supply. There are many types and kinds of automatic controls used in stoker installations, and naturally the electrical connection will depend upon the controls used. There are some types of controls which use a low voltage operating current, this low voltage supply being furnished by a transformer. It is well to remember at least one major fact, which is that such a transformer will operate only on alternating current. There are also controls which operate at full line voltage, and where direct current only is available, this type should be specified.

Some systems use relays or circuit breakers, while other types of control devices handle the entire motor current. With these latter types, only standard fuses are used, and circuit breakers and relays are unnecessary. Connections are also rather complicated. Control manufacturers always furnish wiring diagrams with every device sent out, but where a number of different types of controls are used in one system,—a practice which is becoming quite common,—it will be necessary to work out a complete set of connections which will permit the functional operation desired. As stoker manufacturers very seldom make their own controls, it is sometimes a little difficult to secure a correct wiring diagram under such conditions.

The characteristics of the motor current supply are, of course, determined by the regulations of the local electric company. Electric motors are in such widespread use that practically all contractors are familiar with the procedure which must be followed in this respect. There is one point in connection with stokers, however, which should be watched for. Three-phase current at 60 cycles frequency is so well standardized and commonly used that the majority of installations will require motors of this type. Stoker speeds and other operations are based upon the use of 60 cycle motors. In certain sections of the country 25 cycle current is furnished by the local utility for power purposes. 25 cycle motors are easily available at substantially the same price as 60 cycle machines. It happens, however, that 25 cycle motors always run at a different speed. If these motors are connected to a stoker without proper compensation being made, the stoker will not operate as designed, and will probably give very unsatisfactory results. Buffalo, New York and Gary, Indiana, are towns which supply 25 cycle current, and in which stoker men who did not consider the electrical characteristics carefully enough have had very sad experiences.

In brief, the selling and installation of stokers by a heating contractor is no more of a problem than he encounters every day with his other lines, provided he gives to the stoker the same consideration and planning, and care in installation, which he would

use on his usual piping jobs. There are only a few new or unusual factors connected with stokers, and competent advice on these points is not difficult to obtain. Because of the immense amount of publicity which has been given to automatic heating, the public is rapidly becoming stoker-minded. And inasmuch as the majority of the stokers which have been manufactured have been installed under boilers, it can readily be seen that stokers fit in remarkably well with any remodeling program. Since all of the interests involved in building construction are solidly behind the idea of remodeling as the most profitable present day activity, the boosting of stokers by the heating contractor is a logical method of reaping the largest possible harvest from this very active movement.

Connecting Water Closets at Three Different Levels

(Continued from Page 75)

is required. Otherwise, water closets are not required to be vented.

Fig. 13 is taken from the pilot drawing of one of the Tennessee cities, and illustrates clearly the water closet venting requirements of that city, which are as follows:

"No vent is required for a siphon water closet if on a branch not over 5 ft. long (5 ft. includes the vertical part of the branch). If the branch is from 5 to 20 ft. long, the water closet must have a 2-in. vent; if over 20 ft., the vent must be full size through the roof or carried above the highest fixture, back into the stack."

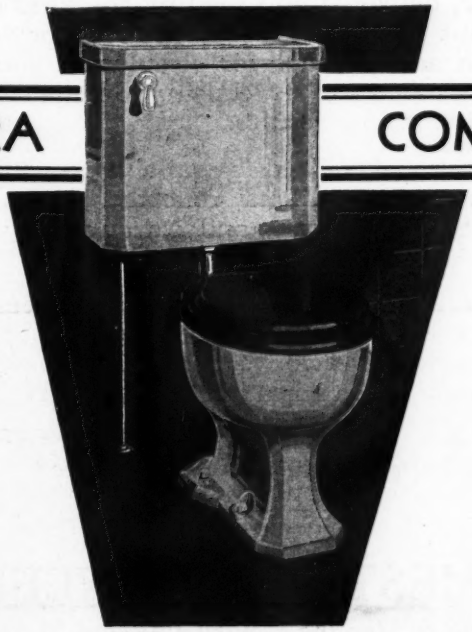
Thus we see the great variety of practice in the installing of three water closets discharging into the same stack at three different levels. Some of these practices are directly opposed to others. Often one of two such opposing practices must be right and the other wrong, and often it is difficult to know which is correct and which is not.

We do not know that it is essentially necessary that every plumbing code should deal in exactly the same way with a given practice, for often there is more than one correct method of installing the same job. We do feel, however, that often some practice that differs widely from generally accepted practice may not be wrong from a sanitary standpoint, but may involve so much greater expense as to be an injustice to those who have the bills to settle.

The point we have just made is one of the serious ones, for through ignorance or poor judgment expressed through a plumbing code, great injustice may be put upon property owners by demanding plumbing that is unnecessary or needlessly expensive.

Therefore, since it seems a matter of great difficulty to put the entire plumbing practice of the country on the same correct basis, our great concern should be to see that safe plumbing is installed in a manner that is as free as possible from unnecessary expense and complication. The ultimate, or that which finally is to be desired, is simplicity and it is only by attaining this objective that maximum safety is effected.

THE NEW ERA COMBINATION



The New Era is a washdown that is highly improved in appearance because of the elimination of the front hump. The tank has chamfered corners with no bead and makes a symmetrical combination for the modest home.

The cover has raised outside edge forming real shelf for bathroom articles.

WRITE FOR FULL DETAILS

Many contractors are suggesting The New Era to the home and apartment owner every time they are on a job. In this way they secure much remodeling business that otherwise might be lost.

Display The New Era on your showroom floor and bring it to the attention of your customers. It is a real money maker.

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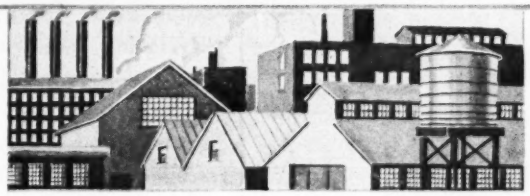
SUPPLY NEWS

AMONG MANUFACTURERS, WHOLESALERS AND SALESMEN



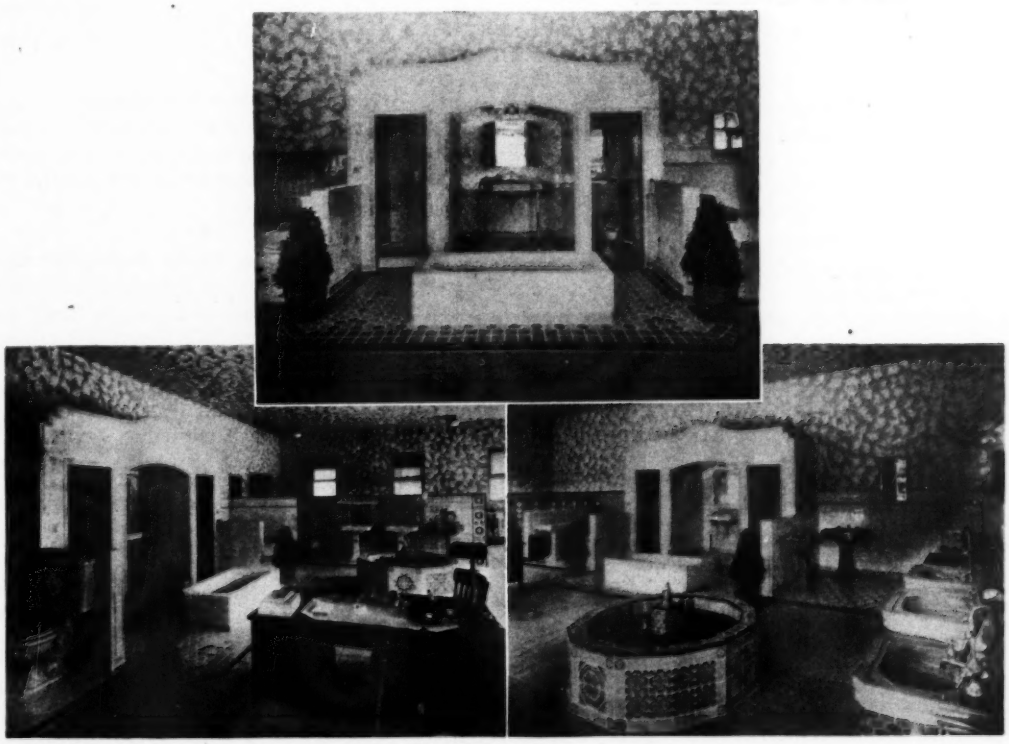
Southern Counties Supply Co. Opens Long Beach Branch

The Southern Counties Supply Co., Ltd., formerly the Orange County Pipe & Supply Co., 615 East Washington avenue, Santa Ana, Calif., recently held the formal opening of its Long Beach branch. An elaborate display in colors is maintained at the branch, which is located at 1326 Alamitos street. A light lunch was served during the afternoon and evening of the opening day. More than five hundred persons attended. J. L. McFadden, vice president of the company, is manager of the Long Beach branch. Other officers of the company are Earl A. Lyon, president, and G. B. Young, secretary-treasurer. Below are views of the display room.

P. N. Guthrie, Jr., Elected President of Reading Iron Co.

Following a special meeting in Philadelphia of the board of directors of the Reading Iron Co., Reading, Pa., recently, A. J. Maloney, chairman of the board, announced the election of P. N. Guthrie, Jr., as president of the Reading Iron Co. Mr. Guthrie has been serving as vice president, in charge of sales. He succeeds Leon E. Thomas, who resigned the presidency on July 31. Since that time Mr. Maloney, as chairman of the board, has performed the executive duties of the president, which will now be assumed by Mr. Guthrie.

Mr. Guthrie became vice president in charge of sales of the Reading Iron Co. on December 1, 1929. He re-



Views of the display room of the new Long Beach branch of the Southern Counties Supply Co., of Santa Ana, Calif.

ceived his initial training in the employ of Park Brother & Co., of Pittsburgh, which owned and operated the Black Diamond Steel Works. Mr. Guthrie has had extensive experience also in the management and operation of natural gas utilities.

He was associated with the Philadelphia Company of Pittsburgh in its natural gas division, was superintendent of Hornell Gas Light Company of Hornell, N. Y., and general manager of Chemung County Gas Company of Elmira, N. Y.

Returning to the iron and steel business, Mr. Guthrie served for several years as sales agent and general manager of sales for the Longmead Iron Co., Conshohocken, Pa. In 1909 he took charge of sales for the South Chester Tube Company of Chester, Pa., in a large territory which included most of the oil fields in this country.

P. N. Guthrie, Jr.

In July, 1917, Mr. Guthrie left the South Chester Tube Company on leave of absence and entered the government service as assistant director, Bureau of Oil Well Supplies, U. S. Fuel Administration. At the end of the war he returned to the South Chester Tube Company and in February, 1919, was made manager of sales, serving in this capacity until his resignation in December, 1929, to become vice president in charges of sales of the Reading Iron Co.

◆

To Build Plant for Star Nipple Co.

The Star Nipple Co. of North Chicago, Ill., has made arrangement to lease a $50,000 plant which will soon be built in the 4700 block on South Richmond street, Chicago. The plant will be 142 ft. wide and 132 ft. deep, of one-story brick and steel construction. The contract for its construction has just been awarded.

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Office Now in New Location

George Stratford Oakum Co. has moved its office from 160 Cornelison avenue to 120 Montgomery street, Jersey City, N. J.

A bulletin mailed recently to all members of the Eastern Supply Association, New York City, by its secretary, Frank S. Hanley, in part said:

"Close scrutiny should be given to the problems of sales, advertising and marketing, and in this connection we again advert to the modernization field. The business is there. Intelligent advertising, intelligent selling efforts, and service, will secure it for you. We had occasion recently to discuss modernization with a few live wire houses. These gentlemen educate their salesmen not to lend a too willing ear to the 'no money' alibi. Rather, they hammer into their salesmen the investment enhancement of modernization, comfort, quality of their product, and the effectiveness of the time payment plan in setting off a 'no money' barrier. As a result the salesmen of the firms interviewed are doing a rather satisfactory monthly business in modernization work."

Moves Executive Offices

J. H. Balmer Co., on November 11 removed its executive offices from 265 Plane street, Newark, N. J., to 399 Central avenue, that city. The company's manufacturing plant is located at 105 Mulberry street, Trenton, N. J. J. H. Balmer is president of the concern.

◆

Builds New Warehouse

The Plumbers' Supply Co., Tulsa, Okla., of which D. W. Holmes is president, has let the contract for erection of a 1-story and basement 50x165 ft. warehouse, to cost $5,000.

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J. H. Williams & Co. Make Additions to Plant

J. H. Williams & Co., of Buffalo, N. Y., have just closed contracts for an addition to their plant at Buffalo. The extension will provide an increase of approximately 30,000 sq. ft. in floor space, to be used for additional heat-treating facilities and also for finishing, assembling and storing the company's standard stock products.

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Standards for Closet Seats Will Be Discussed Dec. 10

A conference has been called by the Department of Commerce, Bureau of Standards, Washington, D. C., for December 10 at the Palmer House, Chicago, of manufacturers, distributors and users of closet seats, for the purpose of considering the adoption of a commercial standard recommended by the seat manufacturers. The proposed commercial standard embraces types, shapes, material, construction, colors, finishes, hinges and general practices. G. W. Wray of the division of trade standards will represent the Department of Commerce.

Gives Series of Radio Broadcasts

The Pease Foundry Co., Ltd., Toronto, Ont., has started a series of radio broadcasts over the CKGW, Toronto system, to supplement newspaper advertising on behalf of the deferred payment plan recently inaugurated by the company. The function of the plan is to aid in taking the burden of advertising off the dealers. Judging from the number of complimentary messages received by the foundry, it is succeeding very well.

◆

Elected President of Gas Products Association

At the recent Chicago convention of the Gas Products Association, E. L. Mills, sales manager of The Bastian-Blessing Co., was elected president. This is the first time in the history of the association that a manufacturer of oxy-acetylene welding and cutting apparatus has been elected president, as heretofore presidents have been manufacturers of oxygen gas. As chairman of the association's film committee, Mr. Mills raised thousands of dollars for production of films, and supervised their production. As a result, the association owns and exhibits three motion picture films portraying the development of welding. These films have been shown in many parts of the world, and will be exhibited without charge before associations and clubs.

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Welding Convention Has Building Piping Session

The entire afternoon session of the International Acetylene Association convention, held in Chicago on November 12, 13 and 14, was devoted to the subject of piping in buildings. The general impression given was that there is an increased use and a wider application constantly being developed for welding in the building industry. In a previous session the possibilities in welded steel residences were discussed, indicating that in the average all-welded steel home of six rooms about 15,000 pounds of steel including metal lath, about 800 lineal feet of welding and some 40 pounds of welding wire would be required. In the piping session the discussion turned to what actually had been and was now being done.

W. H. McCaully gave an illustrated talk on the welding of piping systems in the buildings of Montgomery Ward and Co. He told that one of the problems which welding had solved for them was that of running pipe lines close to ceilings and walls. In one instance the plans called for the pipes to be installed suspended from the ceiling. They were to be concealed by a false ceiling. Clearances were so small that had it not been for welding, it would have been necessary to drop the false ceiling below the tops of the window openings with consequent changes in the building which was of reinforced concrete construction. Problems of this nature usually develop during the course of construction.

The general discussion which followed turned to a consideration of the economic minimum size of pipe which could be welded, in a general piping installation. Mr. McCaully stated that his company does not weld pipe under 2¼ in. Mr. Harry Hart, who was in attendance at the session stated that his company has found it unprofitable to do welding on pipe under 3 in. in diameter. The general opinion was that 2-in. pipe should be the lower limit.

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Jobbers' Credit Association Gives Dinner

What many of those in attendance reported as the best dinner party of any during the six consecutive years of effort in this direction by the Jobbers' Credit Association, New York City, was held November 8 at the Hotel Commodore, that city. Numbered among the six hundred present were many manufacturers from out of town, one of whom flew by airplane from the Middle West. A substantial number of the Hudson-Bergen County, N. J., division membership, as well as large representations from the Westchester County, N. Y., and the Long Island divisions, were present occupying respective tables.

After dinner the "Hollywood Frolic Review" occupied the attention of the guests. Among the entertainers were many theatrical stars who presented their specialty numbers, while groups of other performers offered varied songs, dances and musical comedy chorus presentations.

The dinner committee comprised the following: Chairman, S. C. Breihof of Dimock & Fink Co.; Mortimer Smolka of E. Smolka Plumbing Supply Co.; Charles Schwartz of E. Schwartz Plumbing Supply Co.; E. E. Basch of Regent Plumbers' Supply Co.; I. Zicherman of Kamerman & Co., Inc.; Arthur H. Kramer of Ben Kramer; T. W. Powers of Asco Supply Co.; E.

Some of the guests at the dinner party given by the Jobbers'Credit Association, New York City

"FOAM-PROOF WITH NO FOME"

Make this test . . .

AND YOU WILL FOAM-PROOF EVERY JOB WITH

NO FOME

The product that ends boiler foaming forever

Order one pound of No Fome from your jobber. Put a spoonful in an envelope and take it to a job that is not giving satisfaction. Draw a little water out of the boiler and boil it in a small pan. If it foams add a little No Fome. You will see it instantly stop foaming, and will learn why you should safeguard every old or new job by this scientific treatment.

YOU GET THE BLAME

when an owner calls to tell you that one of your boiler installations does not steam properly or has thrown water, ruining rugs, floors and furniture. Even though the fault is neither yours nor the boiler's, you get the blame.

Protect every new job with No Fome and start a campaign in your neighborhood cleaning out old steam or water jobs. Let No Fome do the work for you and make extra profits.

PRODUCT OF

FEDERATED LABORATORIES, INC.

229 East 38th Street • New York City

JOHN G. KELLY, EXCLUSIVE DISTRIBUTOR

210 East 45th Street • New York City

You may send me one jar of No Fome and invoice it through

JOBBER ADDRESS

I understand that the price of this one-pound jar will be $4.00 (it will take care of up to 250 ft. of installed radiation depending on the water condition in your territory.) Also send me complete literature.

*Name*_____

*Address*_____

*City*_____ *State*_____

Moucha of Moucha & Quelch, Inc.; L. Sherman of E. F. Keating Co.; J. Reitzfeld of M. O'Neil Supply Co., and C. W. Mitchell of W. H. Hussey & Son.

Milton M. Goldsmith, vice president of Sam S. Glauber, Inc., is permanent chairman of the board of directors. John A. Hurley is president of the association; Mr. Breihof, first vice president; Mr. Basch, second vice president; S. Samuels of Paramount Plumbing & Heating Supply Corp., third vice president, and Edward Schwartz, president of E. Schwartz Plumbing Supply Co., treasurer. Glenn B. Van Buren under whose direct supervision the arrangements for the affair were made, is secretary.

◆

Executive Committee of N. P. S. A. Meets in Cleveland

The executive committee of the National Pipe & Supplies Association met recently in Cleveland, Ohio, with representatives in attendance from the Pacific Coast, the Middle Northwest, the Southwest, as well as Middle Western and all Eastern territories.

One of the high lights of the meeting was the report of the merchandising committee or the sales promotion committee, the latter having been approved as the proper name. E. L. Flentje, secretary-manager of the Plumbing & Heating Industries Bureau, reported on an investigation which his organization made with some 91 contractors and their attitude toward the distributors' salesmen. In this study, modernizing was given some attention, and it showed quite definitely that out of 91 contractors, 65 of them did as much new work as they could do and at the same time served a fairly definite community with repair service. Sixteen contractors claimed they did little or no repair work and tried to center their business efforts entirely on new work, and in some cases upon modernization jobs. In this investigation it was brought out that the supply house salesman was liked by the contractor, and, therefore, a splendid opportunity now exists to enhance this value of the contractor's like for the distributor's salesman by carrying forward a program which will assist him in developing a sales promotion program.

Dr. T. N. Beckman, merchandising counsellor of the association, presented in an unusual way a plan for pointing out the economic necessity of the wholesaler and further showing the advantages and service the wholesaler renders the contractor. Following the distribution of promotional work along these lines, a similar folder will be drawn up and sent to manufacturers.

The reports rendered met with the unanimous support of the board, and the sales promotion committee has been instructed to carry forward immediately an active program.

A report was read by the chairman of the fittings committee, which showed definite need of further study in this field of activity. The board voted to continue membership in the National Plumbing & Heating Institute, Inc. A committee will be appointed by the president to give consideration to future selection of convention cities.

The offices of the association are to be leased for an additional two years upon direction of the board, and additional directors, to fill vacancies created by the

amendment of the constitution, will be selected and presented to the convention in Cleveland next May.

A study of brass pipe conditions was requested and the special study on cost research for pipe, valve and fittings will be continued.

W. H. Smith, chairman of the convention committee for 1931, reported that the committee for the convention had been appointed and that the Cleveland wholesalers are bending every effort to make the 1931 convention a success. Plans are now under way for the securing of several outstanding speakers. The convention program will be one entirely of business activities. The Cleveland committee promises an interesting program for the ladies.

◆

John Simmons Co. Entertains Sales Force

John Simmons Co., New York City, entertained its sales and estimating forces recently at a dinner in the New England Room of the Prince George Hotel, that city. At the dinner, which is an annual affair, two newly appointed salesmen, John J. Doyle, formerly of Crane Co., Chicago, and Charles S. Patterson, formerly of Plate-Adams, Inc., Jersey City, N. J., were presented. Both these men have been assigned to the industrial trade.

John M. Chaplain, manager of the plumbing department of the company, presided at the dinner meeting and conducted the many discussions concerning existing business and marketing conditions which were heard. E. K. Pierce and W. C. Hust, both of the William Powell Co., Cincinnati, Ohio, were guest speakers at the meeting.

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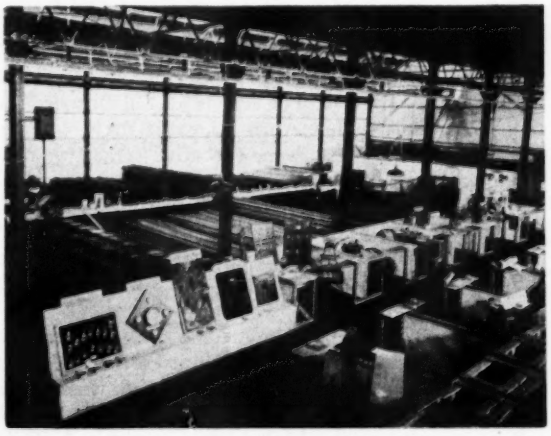
Holds Exposition with Formal Opening

A novel feature in connection with the formal opening of the new quarters of The Ross-Willoughby Co., Springfield, Ohio, was a mechanical exposition participated in by seventy-three manufacturers of plumbing, mill and mine supplies. Booths and counters were erected in various parts of the building for the showing of the products, and the interested public was invited to attend. The accompanying photograph shows a portion of the display.



A portion of the mechanical exposition in connection with the formal opening of the new quarters of The Ross-Willoughby Co., Springfield, Ohio

Cast Iron Standard Flanged Tees — For Immediate Shipment.

THOUSANDS OF TONS
— always ready

BACK of this "Lynchburg Service" we love to talk about, are huge stocks of Cast Iron Pipe, Fittings and Flanges in all standard sizes—ready for immediate shipment. "Lynchburg Service" steps up and makes your piping jobs more profitable.

When you need a Fitting *quick*, wire Lynchburg.

Bell and Spigot Pipe and Fittings from 4" to 48"

Cast Iron Flanged Pipe from 3" to 84"

Cast Iron Flanged Fittings and Flanges from 1" to 84"

de Lavaud Centrifugal Cast-Iron Pipe

LYNCHBURG FOUNDRY COMPANY

General Office, LYNCHBURG, VA.

Peoples Gas Bldg. CHICAGO, ILL.

50 Church St. NEW YORK, N. Y.

"I'LL STOP THAT NOISE WITH A SHERWOOD"

"The tank in my bathroom is constantly whistling and gurgling. It is always dripping and leaking. Can you do anything about it?"

When a customer makes that sort of inquiry, the safe reply for you to make is, "I'll stop that noise and that leak with a Sherwood Ball Cock."

It's safe because Sherwood is guaranteed to close against any city water pressure without whistling, gurgling or leaking.

Every bathroom, old and new, deserves a Sherwood Ball Cock. And here's an interesting fact:

When you install a Sherwood Ball Cock in an old bathroom, it stands as a sample of the work you do. Its wonderful performance will often be the means of opening up big leads for complete bathroom remodelling.

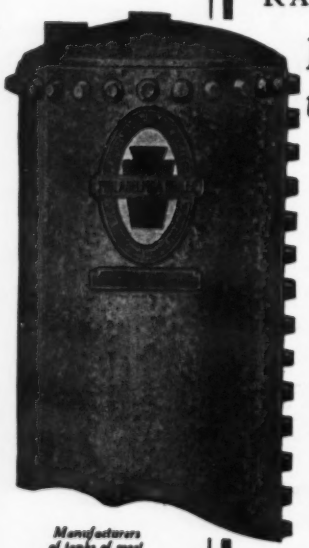
Sherwoods are furnished with any length shank desired. They are always readily available thru your jobber.

Try a Sherwood for your next job. You'll know why it is "standard" with hundreds of plumbers everywhere, when you do.

Mark it down, now, to order a Sherwood Ball Cock.

SHERWOOD BRASS WORKS
Jefferson and Mt. Elliott Aves. DETROIT, MICH.
REPRESENTATIVES
A. A. Riordan Co. (Inc.), 1520 E. 7th St., Los Angeles; 303 Colman Bldg., Seattle
E. S. Thompson, 1401 Chestnut St., Philadelphia
Fred G. Hoffman, 811 Edgewood Ave., Trenton, N. J.
Fred B. Wilsey, Plymouth Bldg., Minneapolis

PENNSYLVANIA
RANGE BOILERS



Lead the Way to Additional Profits

When you install a Pennsylvania Range Boiler on a job, the extra, trouble-free service it gives builds up your reputation and your customers' good will.

Standardize on Pennsylvania Range Boilers and watch your sales increase.

In Philadelphia for over 35 years.

Ask your jobber to supply you.

Manufacturers of tanks of most every description on specification.

PENNSYLVANIA RANGE BOILER CO.
Main Office and Plant:
S. W. Cor. 24th and Washington Ave., Philadelphia

Death of Conrad D. Street

Conrad D. Street of Chicago died at his home in that city on Sunday, November 16, in his 78th year. He was born in Philadelphia and came to Chicago in his youth. Forty-four years ago he was one of the founders of the firm of Street, Young & Kent, manufacturers of plumbers' brass goods, which later became the Street & Kent Mfg. Co., and he was active in this company's affairs until a few years ago, when he retired from business. He is survived by his wife, a son, W. J. Street, president of Street & Kent Mfg. Co., and a daughter, Mrs. A. G. McKinley.

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Peoria Meeting Sponsored by Committee of Ten

The first of a series of meetings sponsored by the Committee of Ten of the Coal and Heating Industries was held at the Creve-Coeur Club, Peoria, Ill., recently.

The meeting was presided over by George Harms, treasurer of the Committee of Ten and representative of the National Association of Sheet Metal Contractors, one of the ten co-ordinated industries.

After a fine dinner, Mr. Harms called the meeting to order and briefly explained the rapid changes that were coming in the heating field. To improve the relations between the Coal and Heating Industries, Mr. Harms explained that it was felt that closer contacts should be made between certain groups who could materially assist each other in solving a serious problem now confronting the heating industry.

Mr. Harms was followed by Carlyle M. Terry of Chicago, who represents the anthracite industry on the Committee of Ten. Mr. Terry sketched the work and activities of the Committee of Ten since its formation, and clearly pointed out the objectives to be gained by individual co-ordinated activity in trade areas such as represented in Peoria.

As a result of this important meeting in Peoria, many more such meetings will be held in the near future, having as their object a clearer and more constructive spirit of co-operation between the industries allied in heating by solid fuel.

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Plans Announced for Eighth Annual Oil Burner Show

Preliminary plans for the eighth annual convention and oil burner show of The American Oil Burner Association in Philadelphia April 13 to 18 have been announced by Harry F. Tapp, executive secretary of the Association. Convention headquarters will be in the Benjamin Franklin Hotel. The annual oil burner show will be held across the street on the exhibit floor of the Gimbel Building. Space will soon go on sale to members and 129 booths, each 10 ft. by 10 ft., will be available for exhibit purposes.

The annual show has become the occasion for introducing new burner models and equipment improvements, and information reaching the association headquarters indicates that many new and interesting developments will be revealed at the Philadelphia exposition. It will be the second consecutive show which will be open to the general public.

"There are probably in the greater New York area between 400 and 500 jobbers and so-called jobbers. Most of those jobbers and so-called jobbers are in business primarily because the manufacturers are passing on to them materials on credit which those men are not in a position to pay for and I doubt that they ever will be."
—F. S. Jefferies.

Credit Can't Be Measured With a Yardstick

By F. S. JEFFERIES*
Manager, New York Credit and Financial Service

MY message pertains to credits. Probably some of you know that I have been in New York approximately three months making a study or survey of what I have found to be the worst mess that probably exists today in our industry. Unfortunately, a great many of the manufacturers selling in the New York territory do not even consider that a part of America; they think it is export business.

Every crime known to an industry is prevalent in New York and Brooklyn, but the outstanding crime is the manner in which the manufacturers are passing out materials on unwarranted credit. There are probably in the Greater New York area between 400 and 500 jobbers and so-called jobbers. There are so many that if a meeting of the entire group was called it would fill this auditorium. Most of those jobbers and so-called jobbers are in business primarily because the manufacturers are passing on to them materials on credit which those men are not in a position to pay for and I doubt that they ever will be.

These statements are based on facts and not on theory. They represent the result of a more or less thorough investigation and I am convinced that many of these firms are in serious financial difficulties. I have had occasion to meet many of these men and the veneer that covers their bodies, and their businesses is the most ridiculous thing I have seen.

Yesterday I pointed out to the manufacturers that the automatic arrears sheet has worked so successfully in straightening out many of the problems of the contractors and has helped the wholesalers in their credits; I further made the plea that the manufacturers adopt a similar system and establish an automatic arrears sheet compiling credit information on the jobbers of this country.

I want to say to you men that regardless of the progress that has been made in the credit profession, you must agree with me when I say that to expect 500 credit managers sitting in the offices of 500 manufacturing plants throughout the country passing on the credit of some particular wholesaler to think alike, is asking the impossible. Credit can not be measured by a yardstick, but is entirely, when it is handled individually, a matter of judgment. It is my firm conviction you will not get very far with stabilization as a definite program until you straighten out your credit problems. By the same token you are not going to get very far with your credit problems until you have a definite centralized credit control.

The Automatic Arrears Plan Is Feasible

The jobbers have demonstrated that the automatic arrears plan is a feasible, workable plan, and as the jobbers have shown the way, it is up to the manufacturers to follow with a similar program.

Let's go to Chicago for a moment, where I am familiar with the picture. Because of the automatic arrears plan there are between 400 and 500 contractors in the city of Chicago who are paying cash for their materials. Why? Because the automatic operation has proved that these men are not good credit risks and

* Address delivered before the Central Supply Association at its annual meeting, held in Palmer House, Chicago, October 29 and 30, 1930.

because of their own acts they have eliminated themselves from the credit picture.

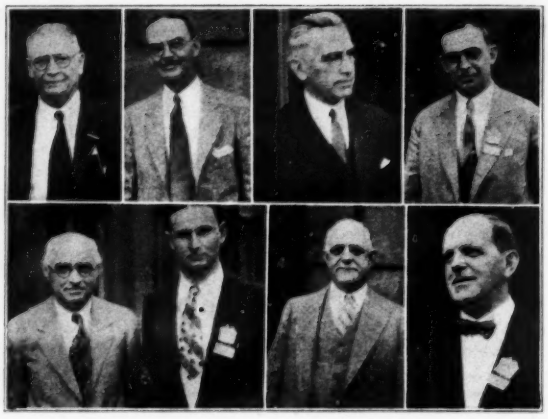
To me it is obvious that if the manufacturers would adopt the automatic arrears plan they would be amazed with the results it accomplished. It would practically overnight show up a large number of jobbers who have been in the habit of not paying their bills, but forcing the manufacturers to carry them. The strict handling of credit through a centralized control plan would withdraw the liberal lines of credit from the irresponsible jobber and as a result probably 50 per cent of the jobbers (I am speaking about New York now) would discontinue business and go to work for someone else, the same as I am doing.

The man who prostitutes credit by selling terms is more of a demoralizer than the man who cuts the price. The man who cuts the price can, if he so desires, withdraw it, but the manufacturer who loads up a jobber with materials on credit can not withdraw that.

I maintain that the first loss in credit is the cheapest loss—it always works that way. I am advocating now what I advocated before the manufacturers yesterday, namely, the strict handling of credit. The jobbers who do pay their bills should be interested in the program and should encourage the manufacturers to adopt it.

The Question of Credit Connected with All Our Troubles

I am confident the first manufacturing group that puts in the automatic arrears sheet will receive the praise and support of the jobbing field. It is the one really constructive thing that we can do.

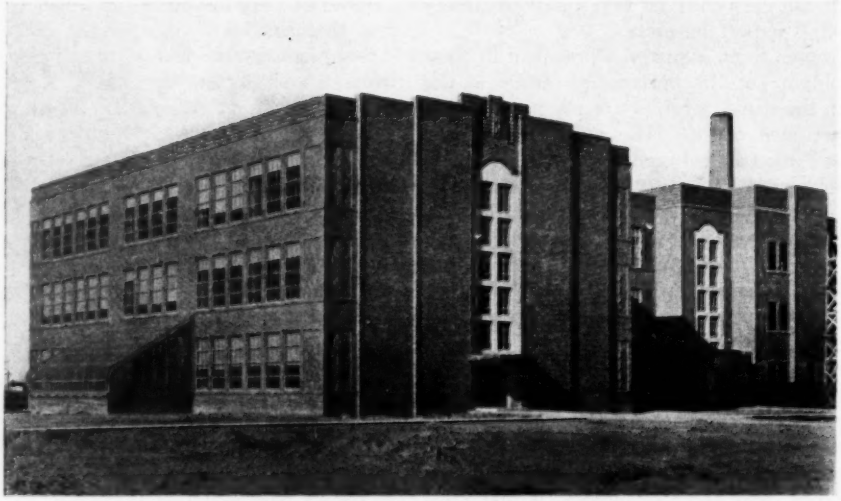


Top row: George H. Glass, Crown Die & Tool Co., Chicago; R. L. Reid, The Protexwel Corp., Chicago; T. R. Talbot, Stanley G. Flagg & Co., Inc., Philadelphia, Pa.; E. T. Houlihan, D. & T. Mfg. Co., St. Louis, Mo. Bottom row: J. Podolsky and H. Roth, both of Jepco Mfg. Co., Boston; J. J. Crotty, vice president, Central Foundry Co., New York City; B. W. Mathes, Crystal Oil Burner Corp., New York City. Photos taken at Boston convention of the N. A. M. P.

I am confident that practically every trouble in our industry ties into the question of credit. I can prove it by just one simple illustration. This is something that happened a few months back when the price of a certain commodity advanced. There were two jobbers in New York—one in good credit standing and the other not worth anything so far as credit was concerned.

The manufacturer notified both jobbers in substance:

MINERAL FELT *for every insulating need*



THE JOHN J. PERSHING HIGH SCHOOL, DETROIT

Another outstanding installation (complete) of Mineral Felt Insulating Products.

The MINERAL FELT INSULATING CO.
2248 Albion St. TOLEDO, OHIO

Have you the Mineral Felt Data Sheets on file? If not we'll send them on request.

"We are going to take care of your requirements, but material must be shipped immediately." The jobber whose credit was good placed his order for a certain number of cars and they were shipped immediately. To the man whose credit was not good the manufacturer said: "We can not accept an order from you for immediate shipment of these cars, but we will ship you one car at a time, and as that car is paid for we will ship you another car." The answer is that the man who had good credit took his cars in immediately and paid for them, the man whose credit was shaky received one car at a time, which strung out his protection over a period of months. Men, I maintain that is unfair. It is not fair to the men who are trying to do the right thing.

The warehousing problem, selling below cost, etc., are tied up with the credit problem, and I can not think of a problem that we have in our industry that would not be materially helped were the manufacturers to enforce strict credit upon the jobbing field.

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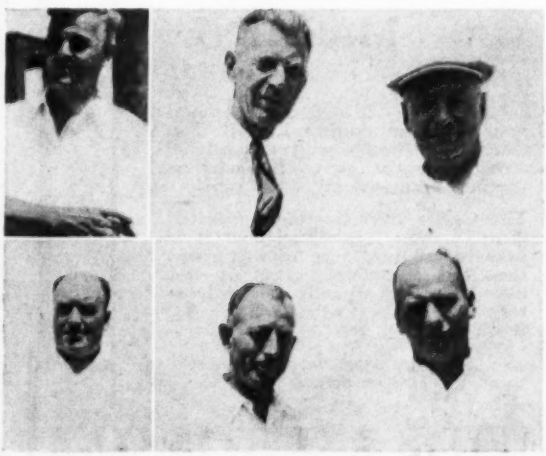
New England Metal Products Golfers Hold Final Meet of the Season

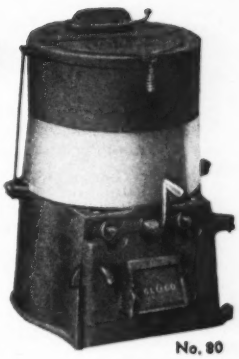
The final tournament of the season of the New England Metal Products Golf Association played over the Sandy Burr course at Wayland, Mass., on October 29, though marred by rain afforded about thirty members the opportunity of getting in a few holes at least. The drizzle, which started in the morning, continued until late afternoon, but a few of the players braved it and got in nine holes before lunch. The prize winners selected from the low net scores of 18 holes included William Hayes, who was first with a net 72; J. S. Nicholl with a similar score was second; E. B. Lane was third with a net 73; M. W. Dennison was fourth with a net 76; Robert McKeown, Jr., was fifth with a net 77; J. E. Bradshaw was sixth with a net 79, and H. S. Murdock with a similar card was seventh; M. A. Lynch with a net 79 was eighth; E. D. Chesebro with a net 80 was ninth, and Fred Egglestone and G. F. Elliott tied for tenth with a net 82.

Many of the players departed after lunch so that



Top row: E. M. Sterner, C. Soderberg and C. M. McSorley. Bottom row: L. L. McConnchie, E. L. Kline and H. Rylander. Photos taken at the July meet of the Michigan Trade Golf Association

A TANK HEATER FOR ANY STANDARD SIZE TANK—OR NUMBER OF FAMILIES



45 different sizes to pick from

The most thoroughly satisfactory method known of heating hot water at low cost is the coal tank heater. And in all tank heater history there has been nothing to approach, in completeness of line and all-around satisfaction, the GLOCO Red Band Tank Heaters.

Tested to 300 pounds—guaranteed to 125 pounds working pressure.

Ask your Wholesaler

EVINS F. GLORE & SON, Inc.

Grand Central Terminal Bldg. New York City

"LOOK FOR THE RED BAND OF QUALITY"

TRADE MARK

GLOCO

RED BAND TANK HEATERS

Jarecki Fittings

Have Perfect Threads

When one of the world's leading manufacturers of threading equipment turns out a threading job—that job may usually be depended upon to be an unusually efficient job. That is one reason why "old timers" specify Jarecki Fittings.

There are many other reasons. Jarecki Malleable Fittings are free from coke impurities; Jarecki Cast Iron Fittings are exceptionally close grained and free from defects. You can count on Jarecki Fittings to speed up production jobs and stand up under years of service.

Jarecki

MANUFACTURING COMPANY

ERIE, PA., U. S. A.

when it was time for the annual meeting after dinner, a quorum was lacking. This forced a postponement until the next mid-winter dinner meeting.

The scores of the other players were as follows:

	G.	H.	N.		G.	H.	N.
J. H. Carr	116	32	84	C. F. Glavin	No Card		
A. I. Harvey	122	26	96	W. H. Thayer	No Card		
T. W. Little	101	16	85	W. C. Rice	No Card		
W. R. Weiss	128	36	92	R. E. Sargent	No Card		
Wm. Bennett, Jr.	No Card			R. W. Hillman	No Card		
J. E. Washburn	No Card			Jack Ross (G.)	No Card		
J. W. Rollins	No Card						

◆

Standard on Staple Porcelain Fixtures Reaffirmed

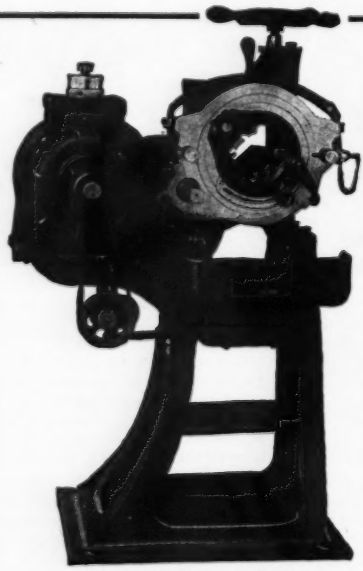
Through a survey made by the Department of Commerce, Bureau of Standards, Washington, D. C., in cooperation with manufacturers of all clay plumbing fixtures, a summarization of which has been mailed to manufacturers and users, it has been recommended by the standing committee to reaffirm for another year, without change, beginning July 1, 1930 the existing commercial standard on Staple Porcelain (All Clay) Plumbing Fixtures.

◆

New England Heating Trades Golf Association Holds Turkey Shoot

The New England Heating Trades Golf Association wound up its year's program, in the form of a turkey shoot, on Tuesday, November 4, at Winchester Country Club, Stoneham, Mass. There were many turkeys as prizes, and the attendance at the meet showed that competition was to be keen for the winnings. Sixty-six members and guests teed off on one of the most difficult courses in New England. Following the chicken dinner served at 6:30, President Coll Flint opened the meeting with the introduction of some of the guests, including National Vice President P. W. Donoghue, Past National President J. S. Cassedy and Mr. Weeks of Harvard College. Vice President Donoghue, who had just returned from the meeting of the national directors at Milwaukee, described the preparations being made for the national convention. President Flint requested that a rising vote of thanks be given to Mr. Frank Cleghorn, through whose invitation the association was enabled to play the Unicorn golf course. Unfortunately, Mr. Cleghorn was unable to be present, because of illness. He was represented by V. J. Kenneally.

The fortunate prize winners, each of whom received a turkey, were as follows: Low gross, T. E. Keefe, 84; first low net, J. Bride, 68; second low net, Edw. Dunn; Coll Flint, Leon Graves, J. F. Dwyer, W. B. Buchanan, John Farrington, I. McClean, Walter Cousins, Walter Illig, Frank Gilmore, J. F. Tuttle, F. T. Scott, James Hern, A. T. Papineau, J. J. Driscoll, J. P. Dwyer, A. S. Brown, David Boyden, A. C. Bartlett, T. J. Swan, Morris Thompkins, John Milliken, R. S. Franklin, Fuller Scofield, William S. Earle, M. R. Grover, Henry Lynch, T. O'Callaghan, Arthur Klonower, F. D. Ingalls, H. B. Buse, L. J. Gelshenen, Ward Hillman, A. J. Blackhall, C. G. Bostwick, Walter Oleson, John Ross and George F. Elliott. Among the guests, A. P. Chase won low gross with



No. 442 Motor Driven
Range 1 to 4"

Curtis

PIPE THREADING MACHINE

IT'S EASY to do good work when your shop is equipped with The Curtis. It threads bends as easily as straight lengths due to the fact that the dies turn instead of the pipe.

The Curtis may be hand operated during power failures so that it is easy to see how very easy it runs. Uses less electricity, takes up less floor space and what is most important of all; The Curtis is EASY TO BUY.

Write for complete purchase plan details

THE CURTIS & CURTIS CO.

318 Garden St. Bridgeport, Conn.

his 78, and was awarded with a ten-pound turkey; first low net went to W. T. Bride for his 67; other prize-winners were V. J. Kenneally, Peter Gray, P. R. Williams, W. H. McGary, R. B. Williams, Charles Cooke, P. W. Donoghue and Fred Kuhn.

	G	H	N		G	H	N
J. F. Tuttle....	90	10	80	W. S. Cousins..	98	21	77
F. H. Files.....117		30	87	R. E. Barten...122		40	82
E. H. Whittemore	97	20	77	H. B. Buse.....113		28	85
W. R. Illig....	97	19	78	A. J. Blackhall.102		16	86
W. B. Buchanan.102		28	74	Edw. Morris ...106		24	82
F. T. Scott....	97	17	80	J. F. Farrington	85	9	76
F. Johnson 113		26	87	C. S. Bostwick.	97	11	86
John Ross 106		8	98	A. P. Chase....	78	Scratch	78
Wm. McGary ..102		26	76	M. C. Thompkins 102		20	82
J. J. Milliken..106		23	83	P. D. Panies...102		..	..
K. F. Bowkett.114		26	88	C. F. Flint.....	85	12	73
L. J. Gelshenen.114		28	86	C. A. Cooke....108		22	86
F. Kuhn 122		34	88	**V. J. Kenneally**	94	26	68
F. B. Ingalls...113		28	85	Peter Gray ...	93	22	71
W. H. Oleson...106		17	89	P. R. Williams.	98	27	71
R. S. Franklin..	99	16	83	C. W. Sawin....113		30	83
J. F. Dwyer....	99	25	74	W. S. Earle....	97	14	83
R. B. Williams.112		35	77	**A. S. Brown....**	87	6	81
J. L. Hern	87	7	80	**E. T. Keefe....**	84	6	78
P. W. Donoghue	92	8	84	D. S. Boyden...	97	16	81
E. F. Dunn.....	93	21	72	H. S. Pike.....	89	8	81
T. J. Swan.....	96	14	82	A. C. Bartlett..	97	16	81
J. L. Bride.....	89	21	68	M. R. Grover...108		25	83
T. Hobson	91	11	80	H. H. Lynch...	95	12	83
W. T. Bride....	82	15	67	Frank Gilmore.106		28	78
J. J. Lyons....109		25	84	Tom O'Callaghan 108		25	83
E. F. Campbell.110		28	82	W. G. O'Hare...107		26	81
T. C. Scofield..115		32	83	J. S. Cassedy..	No Card		
J. J. Driscoll...102		21	81	A. A. Klonower	96	12	84
A. T. Papineau.	93	13	80	L. R. Graves...	87	14	73
J. P. Dwyer, Jr.114		33	81	R. Scott 105		22	83
R. W. Hillman.100		14	86	N. O. Buckley.116		40	76
Geo. F. Elliott..116		18	98				
Ivy McClean ...103		26	77				

Business Personals

JOSEPH L. GOODMAN has been made president of the M. L. Oberdorfer Brass Co., of Syracuse, N. Y., following the resignation of Jonas L. Oberdorfer from the presidency of this company. Mr. Goodman formerly held the title of vice president. FRED S. THOMPSON, formerly sales manager, has been made vice president in charge of sales.

G. C. MUELLER, after a retirement of more than five years, has returned to active duty as vice president of the L. J. Mueller Furnace Company, Milwaukee, Wis., and its allied industries.

C. E. Brokaw

C. E. BROKAW has been appointed representative of The Toledo Pipe Threading Machine Co., Toledo, Ohio, in New England, New York state and the leading eastern Canadian cities. He will take the place of W. J. McGrath, formerly connected with the company. Mr. Brokaw has been connected with the home office for ten years, recently assisted in the company's advertising campaigns, and has also served as service manager. His headquarters will

Now that the FALL ELECTIONS are over and PROSPERITY is ASSURED, WHY NOT PLAN FOR THE FUTURE?

The Purchase of a Bradford Price Book, Arranged for the PLUMBING AND HEATING TRADES, Assures You of a Start in the Right Direction. Start Right—Buy Right—Figure Right, Add a Profit and Sell Right.

Reproduced below is a portion of an actual page from the book, less net and sell prices

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PAGE No. 119 (27th) Revised to October 17, 1930

BRASS FITTINGS—I. P. S.—Malleable Pattern. ELBOWS—90°

	Size	⅛"	¼"	⅜"	½"	¾"	1"	1¼"	1½"	2"	2½"	3"	3½"	4"
ROUGH	List	.12	.15	.20	.28	.40	.63	.90	1.20	2.00	3.50	6.00	8.00	10.00
	Net													
	Net	.00	.00	.00	.00	.00	.00	.00	.00	.00	0.00	0.00	0.00	0.00
	Sell	.xx	.xx	.xx	.xx	.xx	.xx	.xx	.xx	.xx	x.xx	x.xx	x.xx	x.xx
FINISH	List	.30	.35	.45	.56	.75	1.10	1.55	2.00	3.00	5.55	2.00	14.00	17.50
	Net													
	Net	.00	.00	.00	.00	.00	.00	.00	.00	0.00	0.00	0.00	0.00	0.00
	Sell	.xx	.xx	.xx	.xx	.xx	.xx	.xx	x.xx	x.xx	x.xx	x.xx	x.xx	x.xx
NICKEL	List	.36	.42	.53	.65	.87	1.25	1.75	2.25	3.35	6.15	10.00	16.00	20.00
	Net													
	Net	.00	.00	.00	.00	.00	.00	.00	.00	0.00				
	Sell	.xx	.xx	.xx	.xx	.xx	.xx	.xx	x.xx	x.xx				

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Harder to make but worth the trouble

There is a very difficult forging operation in the making of the one piece drop forged jaws for ARMSTRONG BROS. Chain Pipe Vises. They are tough forgings to make, but they are certainly worth the extra trouble, especially to the vise user, for the solid center construction of the one piece jaws is an exclusive ARMSTRONG BROS. feature, gives full support to the pipe, prevents even the smallest pipe from bending under the chain.

Other features of this patented vise include: Drop Forged Steel Base, Drop Forged Handle, Alloy Steel Screw, Hardened Steel Nut, and Proof-Tested Chains.

Patented

Top view of 1-piece forged jaws

Write today for Cat. P-10 which shows and describes a full line of improved pipe tools.

ARMSTRONG BROS. TOOL CO.
"The Tool Holder People"
323 N. Francisco Ave. Chicago, U. S. A.

ARMSTRONG BROS.

THE KAINER PRESSURE GOVERNOR
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PRESSURE GOVERNOR
for Hot Water Heating Systems
—Reduces the cost of a hot water layout.
—Eliminates expansion tank and fittings (with its danger of freezing and overflowing).
—Simplifies installation—makes a better job.
—Saves your time and your customers' money.
—Increases your profits and builds good will.
Write us for full information.
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CHICAGO
761-771 MATHER STREET
Manufacturers

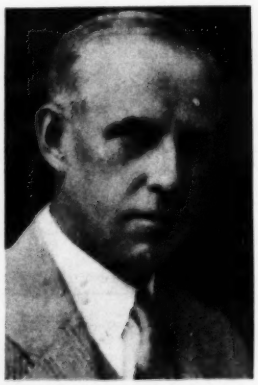
be at the New York office at 72 Lafayette street, which is in charge of C. A. Popp, eastern sales manager.

GUSTAVE A. BERGHOFF, president of the Wayne Home Equipment Co., of Fort Wayne, Ind., with EDWARD H. BERGHOFF of the company's engineering department, sailed on November 12 from New York for Buenos Aires, on an extensive business trip through the Latin-American countries. They will make a comprehensive survey of business conditions in these regions, which they consider as fertile fields for American business enterprise.

JAMES A. BYRNE has been appointed eastern salesmanager with offices in New York City, for J. B. Wise, Inc., Watertown, N. Y., as mentioned in our issue of November 1. Mr. Byrne succeeds John F. Rowe, who resigned. His territory includes New England, Northern New Jersey, lower New York State, and Pittsburgh. Prior to going with J. B. Wise, Inc., in January, 1925, Mr. Byrne was with the F. N. Dubois Co., New York City.

James A. Byrne

D. A. FISHER of the Ohio Heater Co., Columbus, Ohio, is the new president of the Industrial Executives Club of Columbus. W. C. Richardson of the Columbus Heating & Ventilating Co. is secretary.



John A. Hurley

JOHN A. HURLEY has resigned his position as general credit manager for Pierce, Butler & Pierce Mfg. Corp., New York City, as announced in our November 15th issue. Mr. Hurley is president of the Jobbers' Credit Association, New York City, an organization composed of nearly one hundred firms in New York City, Long Island, Westchester County, N. Y., and northern New Jersey. Before his connection with Pierce, Butler & Pierce Mfg. Corp., he was for a number of years general credit manager and assistant sales manager for Graton & Knight Mfg. Co., Boston, makers of mill supplies and leather. Mr. Hurley has made no announcement of his plans for the future.

R. G. COOPER has been appointed sales representative for the Bridgeport Brass Co., Bridgeport, Conn., with offices in Cincinnati. He will represent the company in the Louisville, Ky., Indianapolis and St. Louis district. Mr. Cooper was formerly connected with the Western Cartridge Co., East Alton, Ill., as sales representative in the Cincinnati district.

W. B. SCHULER, manufacturers' representative of Chicago, has moved from 360 North Michigan avenue to 720 North Wabash avenue, in that city.

J. C. CORDNER has been appointed representative in the

metropolitan area of New York City for the Rochester Circulator Co., Rochester, N. Y. Mr. Cordner has his office at 285 Madison avenue.

J. L. STULSAFT, manufacturers' representative, 501 Fifth avenue, New York City, has arranged a display in his offices of the products manufactured by the concerns which he represents.

Convention Dates

January 13 to 15, 1931.—WISCONSIN—The annual convention of the Wisconsin Master Plumbers' Association, to be held at Milwaukee.

January 20, 21, and 22, 1931—ILLINOIS—The annual convention of the Illinois Master Plumbers' Association, to be held at Danville, with headquarters at the Wolford hotel.

January 27, 28 and 29, 1931—A. S. H. V. E.—The annual meeting of the American Society of Heating and Ventilating Engineers, to be held at the William Penn Hotel, Pittsburgh.

February 3, 4 and 5, 1931—OHIO—Thirty-ninth annual convention of the Ohio State Association of Master Plumbers, to be held at Canton, Ohio.

March 16 and 17, 1931—KANSAS—The annual convention of the Kansas Master Plumbers' Association, to be held in Iola, with headquarters at the Kelly hotel.

April 13 to 18, 1931—A. O. B. A.—The eighth annual convention and oil burner show of The American Oil Burner Association, to be held in Philadelphia, Pa., with convention headquarters at the Benjamin Franklin Hotel. The oil burner show will be held on the exhibit floor of the Gimbel Building.

April 21, 22 and 23, 1931—TEXAS—The annual convention of The Associated Master Plumbers of Texas, to be held at Houston at the Rice Hotel.

May 11, 12 and 13, 1931—N. P. S. A.—The convention of the National Pipe & Supplies Association to be held at Cleveland, Ohio, with headquarters at the Hotel Hollenden.

June 23, 24 and 25, 1931.—N. A. M. P.—The forty-ninth annual convention of the National Association of Master Plumbers, to be held at the Auditorium, Milwaukee, Wis., with headquarters at the Hotel Schroeder.

June 23 and 25, 1931.—N. A. M. P. AUXILIARY—The annual convention of the Women's Auxiliary to the National Association of Master Plumbers, to be held in the Hotel Schroeder.

COMING TRADE EVENTS

January 5, 6 and 7, 1931.—The ninth annual conference of presidents and secretaries of state and local master plumbers' associations, and of state and local heating and piping contractors' associations, to be held at the Congress Hotel, Chicago.

February 10 to 14, 1931—The fifth Midwestern Engineering and Power Exposition, to be held at the Coliseum, Chicago.

June 22, 23, 24 and 25, 1931.—Exposition of plumbing, heating and allied products, in connection with the forty-ninth annual convention of the National Association of Master Plumbers, in the arena of the Auditorium, Milwaukee, Wis.

◆

New York Chapter, Holds Opening Meeting

The New York Chapter of the American Society of Heating and Ventilating Engineers held its opening meeting of the 1930-31 season on October 20 at the Building Trades Club, New York City. James H. Scarr spoke on the relation of weather to the heating industry.

Mr. Scarr brought out in his talk that the Weather Bureau records the weather as it is and not as folks wish it to be. He further said that they serve industry whenever called on to do so. He says that they have supplied what he terms "common sense" engineering as illustrated by the elimination of moisture due to condensation in the sugar warehouses located at Newark Bay. He spoke of several other condensation problems which occurred in the shipping industry and the troubles that some railroad shippers experience.

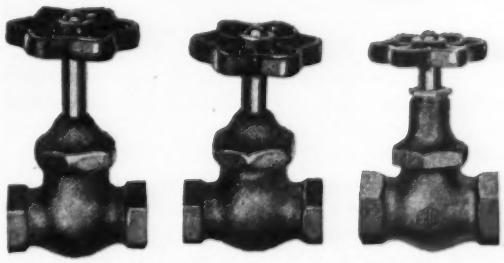
EVERY piece of Enterprise Brass Goods is made with the same care for detail, the same precision of machining and the same accuracy of threading as the parts for an automobile race car.

That means that when you install Enterprise Brass Goods, the time required is reduced to the minimum.

It means, too, that your customers will know a degree of satisfaction from Enterprise that is never possible in inferior goods.

Sell Enterprise Brass Goods on your remodeling jobs and sell them for new installation, too. In either case, the result to you is the same; complete customer satisfaction and an attractive permanent profit.

Ask your jobber for full details on Enterprise.



The Enterprise Brass Works

MUSKEGON MICHIGAN

The National Plumbing & Heating Institute, Inc., has played a most important part this year in:

First: Eliminating doubt as to the legality of the trade practice movement, and

Second: Disclosing to the commission the desire of industries that the movement to eliminate unfair methods of competition in commerce be strengthened, not weakened, and

Third: Securing a stay to the proposed tentative revisions with an opportunity granted to industry to show cause why the fixed policy of the commission for the past ten years should not now be changed.

—F. W. Swanson

How the Trade Practice Movement Stands Today

By F. W. SWANSON*

F. W. Swanson

WE CONSIDERED it inadvisable last January or February to announce to the industry that there was a serious possibility of the entire trade practice movement breaking down completely, or, equally serious, a possibility of such revision to the rules of this industry as to make them less valuable to the industry.

We preferred to use every ounce of strength and energy we had in educational work among manufacturers, wholesalers, and contractors, to secure their voluntary adherence to the rules, for both economic and moral reasons, working at the same time quietly and without any undue publicity within the industry for the trade practice movement as a whole, believing that only through the increasing strength of the movement as a whole will there come increasing strength to the present trade practice movement of the plumbing and heating industry.

As a result of the joint effort of 110 industries, on or before November 15th the standing committee of the Congress of Industries has been granted a formal hearing before the full commission, and an oral argument will be made against the proposed revisions with every confidence that the full intent and purpose of Section Five of the Federal Trade Commission Act will be preserved. Briefs of industry, in protest, including our own brief, have been filed with the commission.

The reasons for secrecy regarding the tentative revisions to our rules as suggested by the Commission no longer prevail. We have in the past respected the request of the director of the trade practice conference division that no publicity be given the proposed changes until after the final action by the commission, but now that the essence of these proposed changes is known to all industries we feel you are entitled to know what were and are the proposed changes and revisions to our rules.

To our Group One rule, Rule I, on inducing breach of contract, there has been no change proposed.

To our Group One rule, Rule II, on Misbranding,

*An address by Fred W. Swanson, president and commissioner of the National Plumbing and Heating Institute, Inc., before the 36th annual meeting of the Central Supply Association, at Chicago. The first part of Mr. Swanson's talk appeared in the November 15 issue. The concluding installment will be published in the next issue.

the commission has suggested a revision eliminating from the rule as adopted by our industry, the words "or failure to brand" so that under the proposed revision the failure to brand an article would not be considered an unfair trade practice.

We all realize that failure to brand provides the means of defrauding the public, that it is unfair to the honest manufacturer, unfair to the honest wholesaler, unfair to the honest retailer, and unfair to the uninformed consumer, and that it is clearly an unfair method of competition in actual practice.

This industry in the interest of honest and open competition wants the wares of the industry capable of being branded, such as pottery, enamel ware, etc., honestly branded so that there can be no possibility of deception, or fraud, in their sale.

To our Group One rule, Rule III, on Misrepresentation. The commission has suggested a revision to the effect that under the proposed rule the misrepresentation must have the effect of deceiving purchasers to be an unfair trade practice. While this is not so important in itself, yet it does go into the argument whether an unfair method of competition by and in itself is to be prevented or whether an act or an unfair method of competition is to be prevented only when and after it can be proven there has been an effect to the unfair evil of misrepresentation.

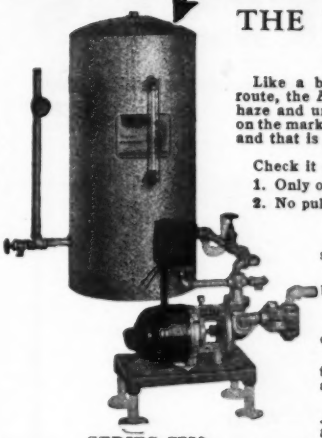
To our Group One rule, Rule IV, on Price Discrimination. The commission has suggested a revision to follow more closely Section Two of the Clayton Act, whereas industries seeking stability and fair and open competition are seeking to bring Rule IV under Section Five of the Federal Trade Commission Act. The first act, the Clayton Act, limits the liability for unjust price discrimination to certain specific conditions. The second act, the Federal Trade Commission Act, condemns broadly any unfair method of competition whatever the conditions and whatever the unfair methods of competition practiced.

Proper Interpretation of Section V Is Imperative

I have no way of knowing how seriously you men are thinking this morning but I wish I could make you realize how serious to industry a proper construction and interpretation of Section Five of the Federal Trade Commission Act, to meet the changing and growing industrial conditions as they develop, can be to industry. Unless industry is able through a broad interpretation of this act to include among the unfair methods of competition to be prevented in commerce the unfair method of price discrimination where the practice is based on deception, bad faith, or fraud, where it is oppressive or where it has an injurious effect on competition, not only as Section Two of the Clayton Act provides with its limitations, exceptions or conditions that the effect of such discrimination must be to substantially lessen competition or tend to create a monopoly but better, as Section Five of the Federal Trade Commission Act provides, condemning any unfair method with no reservation whatever as to how flagrant or mischievous the result, then industry must expect to have constantly before it as a demoralizing influence the knowledge of the impossibility of securing stability in marketing by means of the assurance of fair price competition.

BURKS SUPER-TURBINE PUMPS

ONLY ONE MOVING PART



THE UNDISPUTED LEADER!

Like a beacon on the night air-mail route, the *Burks Pump* looms out of the haze and uncertainty. Of all the pumps on the market there is only one *Best* pump and that is the *Burks Super-Turbine*.

Check it over point by point:

1. Only one moving part.
2. No pulleys, plungers, gears or belts.
3. Extreme Suction Lift.
4. Pressures to 100 lbs. per square inch.
5. Delivery to 1000 gallons per hour.
6. A profitable pump to sell.
7. An economical pump to own.
8. Overhead loops in suction line make no difference to a Burks pump!

Just off the press — Water System Bulletin No. 90. Condensation Return Bulletin No. 91. Send today for either or both!

SERIES 7750 HOME WATER SYSTEM

DECATUR PUMP COMPANY DECATUR, ILLINOIS

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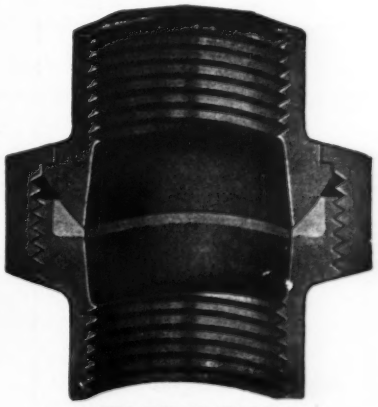

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Made of refined Malleable Iron with Brass Seat inserted in place by powerful pressure so that it cannot become detached.

Approved by Underwriters' Laboratories.

ILLINOIS MALLEABLE IRON CO.
Chicago, Ill.

Manufacturers Full Line Iron Pipe Fittings

PHOENIX
BRASS
FITTINGS

An Acknowledged
Line of Brass Fit-
tings of the Highest
Quality and Service

PHOENIX BRASS FITTINGS CORP.
IRVINGTON :: NEW JERSEY

When the attorney of one of our leading manufacturing groups contends, as in a conference with me lasting four hours, that in his opinion a manufacturer can with immunity sell to fifty wholesalers of the same class in the same city in the same quantity at fifty different prices because under Section Two of the Clayton Act unless such sales would have the tendency of creating a monopoly or substantially lessening competition, something extremely hard to prove, there would be no liability, surely then industry, alarmed by such views, inherited from what have been called the jungle days of competition, is justified in insisting upon the full liberal application to business activities of Section Five of the Federal Trade Commission Act so that it will apply as the Congressional legislation intended it, to all unfair methods of competition in commerce, including any possible unfair method of price discrimination.

When the same attorney further suggests as his only solution of a situation of general price sniping the solution of a competitive war on price to the end of exhaustion, then industry again is justified in demanding relief before exhaustion through the application of a fair trade practice rule under Section Five of the Commission Act, for bear in mind that where competition has been in a death struggle, in nine cases out of ten only by the unlawful price agreement can a correction be made.

Is it any wonder that there are always those interests within all industries that make impossible a sane stabilization structure within their industry, because of their insistence upon the right to discriminate in price to meet competition but really a right exercised more often to create competition of any and all kinds until such time as the Government of the United States calls a halt after competition has been ruined, and only then because a monopoly has been created or trade restrained through the substantial lessening of competition.

Realization should come to the wholesaler of why in the past certain commodities were handled by him at little or no profit though his sources of supply were growing fat "meeting competition where they found it."

We are opposed to any condition which makes it necessary for an industry to do what Mr. Hyde, secretary of agriculture, advocates for the control of farm production, using in his illustration the steel industry and stating that with expanding production and a heavy surplus the solvency of each steel plant in the country was threatened some years back until the answer was found in the organization of a merger of steel plants controlling 65 per cent of the production.

The Wall Street Journal gives the U. S. Steel Corporation much credit for the stabilization of conditions within the steel industry. However, the record of the steel industry shows that while the U. S. Steel Corporation from 1911 to 1923 increased its production of all kinds of finished rolled products 130 per cent, their percentage of the total volume of the business done decreased in the same period from 50.1 per cent to 42.9 per cent, or in other words, the U. S. Steel Corporation stabilized by a policy of live and let live.

Quite a contrary policy to one enunciated by interests contacted recently in this industry who feel there should be no stabilization in their industries unless the future percentage of business enjoyed by them, regardless of

changing conditions or any development of younger, more ambitious men, remains at the present status quo. It is no wonder that when such policies prevail the competition, the general run of buyers, the public, and the manufacturer himself—all suffer.

We are opposed to any sanction or freedom of laws which make necessary to insure stability, the merger of competing interests but we are in favor of such interpretations and application of the laws we have already standing that no company, large or small, can grow at the expense of its competitors, except through the excellency of its products, its service, its superior merchandising effort or its legitimate ambition.

To our Group One rule, Rule V, on Price Discrimination through Split Shipments. The commission has suggested that it be stricken.

The rule represents an unfair method of competition which needs no argument before this body of men to sustain it or to demonstrate the unfairness of the practice which the rule defines.

To our Group One rule, Rule VI, on Secret Rebates.

The commission suggests such a revision that the secret rebate to be an unfair trade practice must conform to Section Two of the Clayton Act, with its qualifying condition that the secret rebate must have the effect of substantially lessening competition or tending to create a monopoly or to unreasonably restrain trade.

Rule VI on Secret Rebates has saved our industry thousands upon thousands of dollars. In the matter of credit extension, or in the matter of proper principles of credit granting, this rule has done much to strengthen credit bureaus throughout the entire United States. It has given the great bulk of the plumbing and heating contractors confidence to accept from their sources of supply, whether manufacturers or wholesalers, more stringent and more proper principles of credit granting.

Under the suggested revision of the commission, a secret rebate granted to one buyer not granted to another buyer, is not an unfair trade practice unless it would reach such proportions as to substantially lessen competition or create a monopoly.

One of my good friends in my own state had some slight right to feel early this year that the institute was not functioning fully under this rule, when, as a matter of fact, had we taken to the commission his complaint against a fellow jobber for the few infractions shown of longer credit privileges extended to the few not extended to all, the weakness of the commission's wavering policy would have become at once apparent through their interpretation of our present strong rule in the light of their proposed revision and much of the valuable work accomplished throughout the entire industry by means of the elimination of the unfair secret rebate, whether in the granting of an extra secret price or of an extra privilege extended to the few not extended to the many, would have been undone.

To our Group One rule, Rule VII, on Selling Below Cost. The commission has suggested a revision that there must be the effect of lessening competition as well as the purpose of injuring a competitor if the practice condemned in the rule is to become an unfair and an unlawful trade practice.

To our Group Two rule, Rule VIII, Cartage.

The commission has suggested that this rule be

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Products that bear the Dehn name have the advantage of many years of study of *your* problems behind them. The name Dehn on the *PeerlesS* Garage Drainage System, for instance, means complete health protection for the garage. Its cost is trifling compared to its value.

New Number Thirty Catalog Illustrating and describing some new and improved appliances upon request.

Your jobber can supply you.
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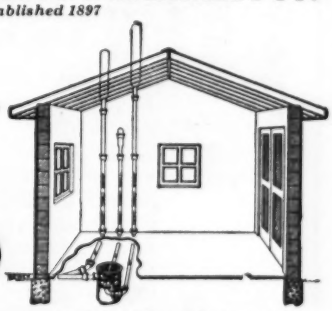

Fig. 62. PeerlesS Garage Drainage System correctly installed. Patented.

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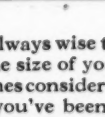
Not "How Big a Profit" but "What Kind"

It isn't always wise to wonder about the size of your profit. Sometimes consider the quality. If you've been paid for the job and have a satisfied customer as well — then you've made—real profit. Use Trenton Brass Products and you'll see what we mean.



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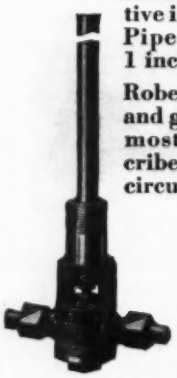
Robertshaw Throttling Type Water Heater Thermostats are fully covered in CIRCULAR FORM R-4. Write for it!

Number 2GV. For single unit circulator and garage heaters. Easily installed. Attractive in appearance. Gas Pipe sizes from ½ to 1 inch.



Robertshaw circulator and garage heater thermostats are fully described in number 2GV circular. Write for it!

SNAP-ACTION TYPE. For Storage Water Heaters and Furnace and Boiler Temperature Control. Gas Pipe sizes from ½ to 2½ inches.

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Write for any or all of the above circulars—they're free —no obligation involved.

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Youngwood, Pa.

stricken, although as a Group Two rule it is only an expression of the industry of what the industry considers an unfair trade practice.

The commission has taken this stand with knowledge of the fact that under the Inter-State Commerce Act of the United States free cartage is an unlawful discrimination when given to one shipper and denied to another shipper under similar circumstances.

Cartage charges are a necessary overhead and as a part of the cost of doing business they must be reflected in the selling price.

Cartage discrimination between customers is inequitable because by it, competitors are placed in an unfair competitive position.

To our Group Two rule, Rule IX, Lump Sum Bidding. The commission suggested this rule be stricken.

There is not a single manufacturer or wholesaler in this room this morning, whether large or small, whether full line or short line, that is not interested in the preservation of this rule.

Your commissioner, and Max F. Burger, of counsel, are taking the position before the commission that this rule in place of being stricken should be placed under a Group One rule and should hereafter be enforced.

Lump sum bidding in itself may not be an unfair trade practice but when employed as a cloak and as the means to practice fraud, deception, bad faith and oppression, thereby injuring competitors and the public, it is an unfair trade practice, a practice commonly employed to force and drive out of business independent manufacturers and dealers, a practice with greater evil possibilities to bring about the effect of lessening competition or tending to create a monopoly than almost any practice we know of today within the plumbing and heating industry.

To our Group Two rule, Rule X, on Repudiation of Contracts, the commission has suggested no change.

To our Group Two rule, Rule XI, on Contracts Post-dated and Pre-dated. The commission makes a slight suggestion for revision which is a mere matter of form and which does not affect the rule.

To our Group Two rule, Rule XII, on Quotations. The commission has suggested that this rule be stricken.

Your industry opposes the striking of this rule because the rule in itself defines an unfair method of competition which is in the nature of a secret rebate.

From this brief explanation of the tentative revisions that were proposed it is clearly apparent that the first year of the institute has been a year of trial unknown to the industry.

It has been a year when it was necessary not so much to eliminate from within the midst of our own industry the unfair methods of competition as defined by rules, but a year to eliminate from the entire trade practice movement any temporary weakness no matter where lodged.

It has been a year to gain for all industries as well as for our own industry, a known path of procedure that would not narrow as it went along, but that would broaden as it went along, permitting for the future that individuality of opportunity and that free and open competition not suppressed by competition but regulated through the co-operation of competition.

(To be continued)

THE TRADE

News of Plumbing and Heating Contractors

N. A. M. P. Directors Adopt New By-Laws

The board of directors of the National Association of Master Plumbers recently held a meeting in Milwaukee, Wis. Many important matters were discussed, including resolutions presented to the national convention in Boston.

The committee appointed by President Drake to consider a revision of the by-laws presented its report and in accordance with a resolution approved by the national convention in Boston, the board of directors adopted new by-laws for the association. Some of the provisions in the old by-laws were rather ambiguous and to some extent obsolete and the new by-laws adopted have been changed to conform to present day conditions. Copies are now being printed and are about ready for distribution.

◆

Milwaukee Masters Make Plans for State and National Conventions

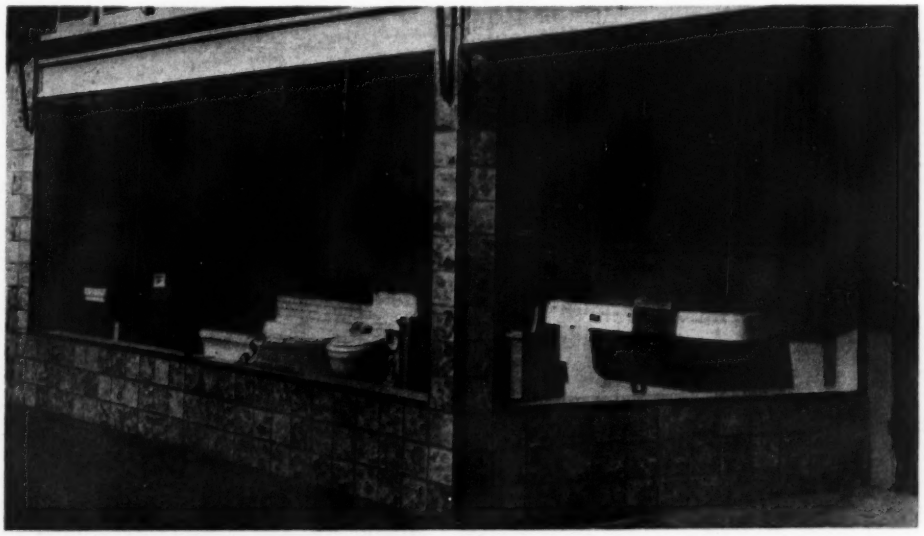
Plans for the Wisconsin Master Plumbers' Association convention, to be held in Milwaukee January 13, 14 and 15, were discussed at a meeting of the state board of directors at the Builders' Exchange on Friday, November 7. Every member of the board was present at the meeting, including Lewis R. Friend, Milwaukee; John P. McCoy, Fond du Lac; Edward Sullivan, Kenosha; Charles Pelunek, Milwaukee; Joseph Wittig, Milwaukee; F. C. Kuetemeyer, Milwaukee; George F. Reeke, Green Bay; and Jacob Schuh, Milwaukee. Speakers were lined up for the state convention at the Milwaukee board meeting, and plans for promotion of convention attendance were discussed.

Plans for a "Health and Sanitation Week" during the national convention week were also discussed at the Wisconsin State board meeting. The national convention will be held in Milwaukee in June, and effort will be made to induce all local plumbing establishments to "dress up" their shops for the occasion.

◆

National Office Sends Letter to State Secretaries

In a letter addressed to secretaries of state associations of master plumbers, George W. Frank, secretary of the National Association of Master Plumbers, quotes the following resolution adopted by the board of directors of the national association at its recent meeting in Milwaukee: "In order to facilitate and assist the states in the acquisition of new members, the national president is hereby given authority to remit to the states affiliated with this association the per capita tax for all members secured during this fiscal year; the amount of same to be remitted on



The new display window of J. F. Mauzy, master plumber of Walnut Creek, Cal. In one window is an attractively arranged bathroom layout, while in the other is a kitchen sink

application for same to the national office by the state secretaries of such states." The action of the board of directors followed consideration of a resolution submitted at the Boston convention by the Wisconsin Master Plumbers' Association. The intent of the rule adopted by the directors is to assist state associations in financing an intensive membership campaign to secure new members, and does not mean that the dues of the new member to the local, state or national would be remitted to him, but that the per capita tax due the national association would be retained by the state association.

◆

Wisconsin Association Has New Address

The new address of the Wisconsin Master Plumbers' Association is 774 North Broadway, Milwaukee, Wis. The location of the association headquarters has not actually been changed, the new address being made necessary because of changes on the part of the city in street names and house numbers.

◆

Buffalo Master Plumbers' Association Holds Meeting

The Master Plumbers' Association of Buffalo, N. Y., held its regular monthly meeting at Gandy's restaurant on Thursday, November 13. After dinner, the meeting was addressed by National President George H. Drake; National Secretary George W. Frank; E. L. Flentje, secretary of the Plumbing and Heating Industries Bureau, who will become commissioner of the National Plumbing and Heating Institute on January 1, and Russell G. Creviston of Crane Co.

◆

Tri-City Plumbing and Heating Trade Development League Holds Meeting

The regular monthly dinner meeting of the Tri-City Plumbing and Heating Trade Development League was held on November 12 at Le Claire Hotel, Moline, Ill.

The educational program, which followed the dinner, consisted of a new motion picture released through the Bureau of Mines entitled "Open and Shut" or "The Story of the Valve." W. L. Stange, president of the League, was in charge of the meeting. The next meeting of the League will be held early in December.

◆

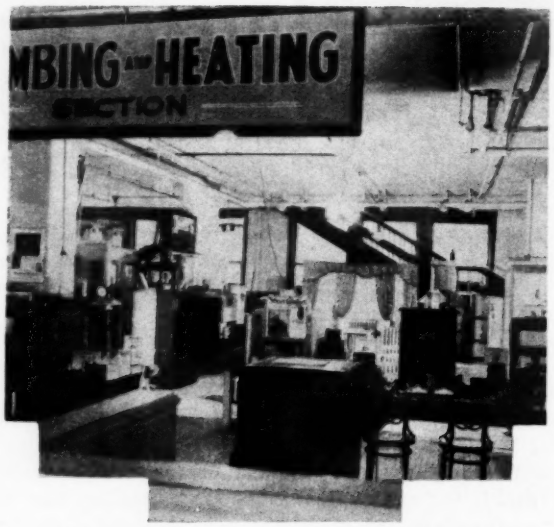
Florida Officers Are Guests of Southeast District

Harry Pepper of Jacksonville, president of the Florida State Association of Plumbing and Heating Dealers, Lee Phillips of Lakeland, vice president, Past President C. B. Perkins of Lakeland and F. R. Fanning, district vice president, were guests of the southeast district recently at a dinner in Winter Haven. Interesting talks were given by the officers and a number of the members who were present.

◆

Kansas Masters Hold Zone Meeting

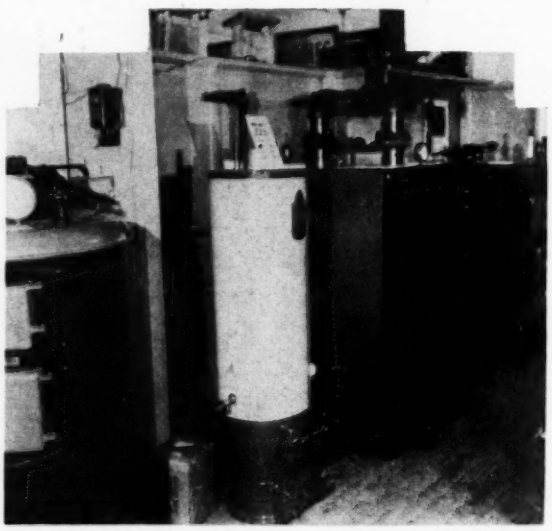
Twenty-three members of Zone 11 of the Kansas Master Plumbers' Association held a meeting recently in Chanute. A dinner was held at the Oriental hotel, and a business meeting followed. Other towns represented were Pittsburg, Independence, Parsons, Neodesha, Fredonia and Coffeyville.



A view of the display of L. H. Prentice Co., heating contractors of Chicago, in one of the downtown department stores in that city

A new merchandising idea is being tried out by the L. H. Prentice Co., of Chicago. This firm of heating contractors has taken space in "The Fair," a department store in the downtown section. The photographs reproduced show the display.

It is understood that this display is operated as a department of the heating firm, the offices of which are in a neighborhood not considered logical for retailing. Harry Hart, a past president of the Heating and Piping Contractors National Association is president of the L. H. Prentice Co.



Another view of the display of the L. H. Prentice Co. in a downtown department store in Chicago

Bureau Aids Contractors With Civic Club Speeches

That plumbing and heating contractors are taking advantage of their opportunities as members of civic clubs to tell the story of their industries would seem to be indicated by the many requests which the Plumbing and Heating Industries Bureau, 35 East Wacker Drive, Chicago, has filled this year for information for speeches on plumbing, the history of sanitation, the importance of the plumber in protecting the health of the nation, the necessity for plumbing codes, the history of house heating, statistics on plumbing and heating and various other topics. The following paragraphs are taken from the Bureau's report:

"During the first ten months of 1930, the Bureau has sent speech materials to 242 contractors in 34 states—all at the request of the contractors.

"The majority of contractors indicated in their letters that the talk they were going to make would be before their local Rotary club. The assumption is that a steadily increasing number of master plumbers and heating contractors are joining the Rotary club as well as other civic luncheon clubs.

"This is a good thing for the plumbing and heating industry. If the progressive contractors in all cities would work through the men's clubs and the members of the women's auxiliary would take a leading part in the activities of the various women's clubs in their communities, more opportunities would open up to point out the need for the modernizing of old bathrooms, the installation of extra bathrooms, the superiority of radiator heating, etc.

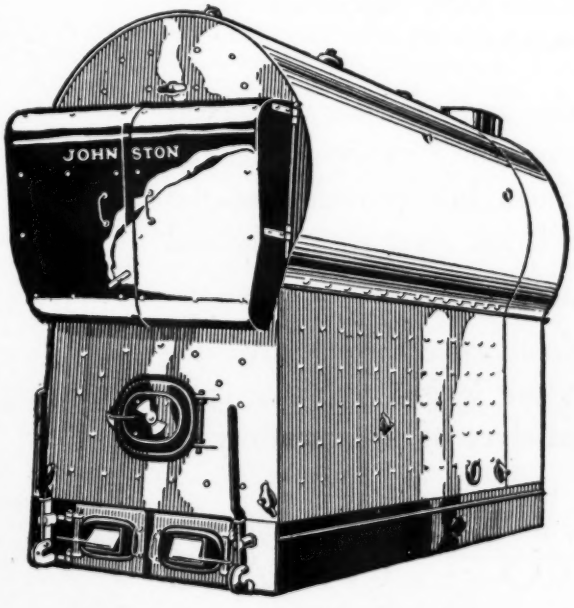
"The public relations work which contractors are doing in their civic clubs ties up closely with the publicity work which the Bureau is doing in the building pages of daily newspapers and in influential magazines."

Following is a list of the prepared talks which the Bureau has available for any contractor: America Leads in Sanitation, Bathing Is as Old as the Hills, Plumbing, an Important Factor in Maintaining Health, The Plumber and Public Health, Our Modern Health Crusaders, The Plumber's Share, When Plumbing Took a Thousand Years' Vacation, Has Office Building Architecture Kept Pace with the Times? How Other Organizations Can Co-operate with the Master Plumber, The Need for Comfort Stations, Some Popular Misconceptions About Plumbers and Plumbing, Running Water on the Farm, History of House Heating, Oil as a Fuel, The Need for Municipal Plumbing Codes, 20th Century Plumbing, Inadequate Number of Bathrooms Is a Cause for Divorce, The Origin and Improvement of the Bathtub in the United States, Some Comments on Bathing, The History of Sanitation, Statistics on Plumbing and Heating, What's New in Plumbing.

In addition to the talks just listed, the Bureau has two especially for women. One is entitled "Program Suggestions for Women's Organizations" and the other "The Keystone for Community Health." In both of these the point of view is that of a wife of a master plumber addressing a group of local club women.

◆

The Wenzel & Henoch Co., of Milwaukee, Wis., will install the plumbing in the new courthouse in that city. The contract amounts to $179,347.



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Doing one thing—
and doing it well

Why have Sloan Flush Valves attained such amazing popularity?

In what respect do they differ from any other valve which will flush a closet bowl?

The answer is to be found in twenty-five years of specialization by men who know their business. Manufacturing flush valves *exclusively,* the Sloan organization has acquired a knowledge of flush valve requirements and a breadth of flush valve experience which are unique and unapproachable.

This wealth of knowledge and experience has been applied to furnish *a flush valve for every purse and purpose*—and today the Sloan line provides for the specific needs of any installation most accurately and economically.

The vast majority of flush valve buyers have discovered this truth. Others are invited to make comparisons and satisfy themselves of the certainty of Sloan superiority.

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MARKETS

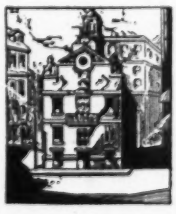
BUSINESS REPORTS FROM LARGE JOBBING CENTERS

THE movement of heating materials continued to hold the center of the business stage of the industry during the past fortnight, although reports from some jobbing centers indicated that demand for boilers, radiators and allied products was not quite as brisk as earlier in the month. In the plumbing line, finishing materials such as enameled ware and pottery lead the procession but business here lacked much of the snap that prevailed in the heating end. More attention was given cast and tubular brass goods by wholesalers' buyers in view of the recent advances in the price of copper. Consequently orders reaching brass goods makers were more plentiful than in the recent past. Brass pipe prices were advanced by several manufacturers, according to reports. Word was also received of a stiffening in manufacturers' prices on boilers and radiators, although no change was made in their sheet prices.

An interesting sidelight to the recent election is the fact that more than $300,000,000 in municipal and state bonds were voted upon favorably in the United States. Unemployment pleas were no doubt responsible in many cases for the universal approval of these bond issues, and it stands to reason that the expenditure of this huge sum will react favorably on business in general.

It was pointed out to us the other day by an official of one of the large railroads that his road will be ready within the next sixty days to go ahead with the tremendous construction program which this road adopted at President Hoover's conference last December. It has taken this railroad practically a year to complete plans for the work pledged at the conference as there is naturally a tremendous amount of detail involved, but now everything is ready. Many other organizations who participated in this conference unquestionably had equally as many difficulties to overcome before it was possible for them to start construction work, and in a short time the full effect of the conference should commence to be felt.

September shipments of round boilers in thousands of pounds, according to the Department of Commerce, were 12,162 as compared with 18,263 in September, 1929; September shipments of square boilers in thousands of pounds were 31,595, against 34,671 in the same month last year; September shipments of radiators in thousands of square feet of heating surface were 10,347, as compared with 14,980 for the same month in 1929.



NEW ENGLAND

Remodeling Shows Gain

AS THE year draws to a close it is apparent that speculation in residential construction and in other enterprises has slowed down considerably, and those who have sponsored new enterprises in the foregoing months have apparently learned that over-optimism and confidence in the extension of a laggard yearly building program has not contained large rewards. Financial institutions and private money lenders have been cautious in their grants for new property developments during the year. In the New England section, on the other hand, there has obtained a fairly good volume of remodeling work which has been abetted in no small way by

producers', wholesalers' and contractors' offerings of the time-payment plan. This method of doing business is becoming more and more popular among master plumbers and heating contractors, for their collections on open accounts have been laggard and with the time-payment system their accounts receivable are practically assured them by local jobbers' and financing corporations' assistances.

While those engaged in the industry are not as busily engaged as they might wish to be, it is encouraging to note that building and engineering contracts awarded in New England during the week ending November 11 totaled nearly a million dollars, the highest amount according to F. W. Dodge Corp., recorded for the similar week since 1903. It is conceded that a good portion of this amount is not within the pale of the plumbing and heating industry, but it indicates, nevertheless, a potential activity for the early part of next year. During the past fortnight construction has not developed to any extent, there being extant some fairly good sized contracts and a scattering of residential work of the better grade which does not, however, enhance presently quiet conditions. In the interim since the last report a number of wholesalers have reported that they have closed contracts which, in monetary value have rather exceeded their expectations.

Some of the prominent realtors, in and around Boston especially, seem optimistic over the buying trend. There is entertained the sentiment that the "afraid-to-buy" feeling is becoming diffused and that, despite present lethargy in transfers of property, the early year will show considerable activity. For the present mortgage money is not so easily obtained, which is the main drawback in the rate of real estate turn overs.

There has been no apparent change in the demand and supply features surrounding the plumbing and heating industry in this territory. House heating boilers and radiators, with their allied products such as steel pipe and cast iron fittings, continue to hold a position of prominence. Installations of finishing materials, even though slightly below normal for this time of year, account for good dispositions of enameled ware and pottery by both jobbers and manufacturers. The majority of wholesalers state that there is little call for roughing-in commodities, with soil pipe, malleable fittings and rough brass goods moving from their stocks slowly. Manufacturers of range boilers report light demand for galvanized boilers but a fairly active call from wholesalers for storage systems and large size tanks. Producers of brass pipe effected advances in their prices during the past week. Several manufacturers of copper range boilers also announced price revisions to their distributors.

The majority of jobbers in this territory are amply equipped for their existing needs and are buying only as gaps in their inventories occur. Makers are producing in sufficient quantities as to maintain good reserves at sources and at their local warehouses and are in position to grant quick shipments on orders reaching their hands.

CENTRAL WEST

Boiler and Radiator Demand Slackens

BUSINESS in plumbing and heating maintained a rather moderate pace in the Central West territory during the past fortnight. The call from contractors and wholesalers for heating materials, according to most reports, did not total as high as during the preceding like period, although orders for repair parts and complete systems sufficed to give the heating branch of the industry a definite advantage over the plumbing end in the matter of tonnage and general activity.

Definite word of building projects that are to be started in the very near future is always good news to those in the building industry and particularly is this true at the present time. Consequently, the announcement just made by the University of Chicago to the effect that five major structures will be underway during the early part of 1931, involving an expenditure of approximately $8,500,000, is welcome news in these parts. This will be one of the university's contributions to the relief of unemployment, according to its president. These five buildings will be in the hands of workmen during the late winter and early spring months of next year.

The five projects are: A graduate school for the school of education, the Oriental Institute building, a group of dormitory units, and International house for foreign students and an athletic fieldhouse.

In addition to these five the university will begin construction during 1931 of an Art building, plans for which are not yet ready, and it is possible that several other educational and research buildings, now partially financed, also will have "1931" on their cornerstones.

Three of the five projects already are underway, but will not be completed before next summer. These are the graduate education building, the Oriental Institute and the men's quadrangle of dormitories.

The recent sudden advance in the price of copper was watched with interest by buyers for plumbing and heating wholesale houses in this territory for the effect that the change would have in the price of commodities made from the red metal and used in this industry. Salesmen for manufacturers of cast and tubular brass goods say that inquiries from jobbers were more numerous in the wake of the copper advance than heretofore and that in some instances orders placed by wholesalers were for larger quantities than actually needed to take care of current business. Those manufacturers who a short time ago announced special quantity prices on certain items had not changed their policy at the time of going to press.

Reports just received from a number of wholesalers of plumbing and heating supplies doing business in Illinois (except Chicago) and Iowa reveal some interesting facts concerning business conditions in this territory.

An increase in business to date over the corresponding period of 1929 was reported by 11.8 per cent of these wholesalers, the gains ranging from 4 per cent to 15 per cent.

About 64.5 per cent of these jobbers reported a decrease in their volumes compared with last year, ranging from 6 per cent to 40 per cent.

The majority of these jobbers, or to be exact, 74 per cent of them, reported a falling-off in their volumes of from 10 per cent to 25 per cent.

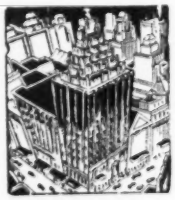
In commenting on collections, 52.6 per cent said that this phase of business was "satisfactory"; 21.1 per cent used the term "fair"; while 26.31 per cent referred to collections as "slow."

Only about 31 per cent of the jobbers reporting said that business had decreased during the past thirty days, the balance either reporting an increase or little change in volume one way or the other.

The movement of steel pipe and cast iron fittings, due in large part to the activity of heating contractors, held at a fairly good pace during the two weeks just passed. Wrought iron pipe tonnages, according to manufacturers and wholesalers interviewed, was fairly steady.

Enameled ware and pottery did not improve in the way of consumption by the trade, according to wholesalers. Soil pipe moved at about the same light tonnage as other roughing-in commodities. The feature of the range boiler market was the firmness in price, volumes being moderate.

Almost without exception, manufacturers of the major commodities are in a position to meet shipping requests promptly, and no complaints were heard from wholesalers concerning this phase of business. With the exception of advances in their prices to distributors by a number of manufacturers of brass pipe, the market was practically unchanged since our last review appeared. Some reports were heard of a stiffening in boiler and radiator prices, but no changes were made in manufacturers' published prices.



NEW YORK

Buying Wave Follows Copper Advance

THE advance in copper metal from an all-time low of nine and one-half cents to ten, eleven and finally twelve cents created an activity in this area starting about the thirteenth of the month which in the opinion of many manufacturers interviewed has not been paralleled since the Spring of 1929. Inventories on hand among wholesalers and manufacturers have been at low working levels for from six to nine months and it is further reported that manufacturers had been running on curtailed schedules in accordance with consumer demand. The advance in this instance was therefore somewhat more pronounced in its effect than in the Spring of 1929, especially as the starting point was from a price of copper which represented the lowest on record. As a result, buying was extremely heavy.

Prices were withdrawn by practically all manufacturers of brass pipe, valves, brass fittings, cast and tubular brass and allied items and wholesalers promptly revised their quotations to correspond to the advanced costs.

It is said that contractors have recently closed many pending jobs with builders who had been hesitant about committing themselves on projects under consideration, but who signed up owing to the impending increase in the cost of the brass products involved, and it is felt in some quarters that this will stimulate activity in other lines as well.

It is reported by at least one manufacturer of enameled ware that business in October compared favorably with that of October, 1929, and several wholesalers likewise report activity which may mark a change in the trend.

Collections in this territory are said to be satisfactory although there is a larger amount outstanding at present than for almost a year. This is attributed, however, to the increased turnover which was felt in connection with the seasonal improvement in heating materials, as well as the large amount of repair work which is being done at the present time.

With the cessation of internal troubles in several foreign countries it is reported that export business has once more resumed a more normal course with somewhat of an accumulation of business being placed at the present time. The advance in copper prices stimulated the closing of pending contracts by cable during the past week and the stronger tone in several commodities such as sugar and rubber has enhanced purchasing power in Cuba and South America especially.

Contracts awarded for new construction of all types in the metropolitan area of New York during the period from November 1 through November 7 totaled $9,784,000, according to F. W. Dodge Corporation. This was at the rate of $1,957,000 per business day, as compared with a daily rate of $3,079,000 for the month of October and of $6,026,000 for November, 1929, when the contract for the new Empire State building was included.

The contract record for the first week of November, 1930, showed $6,104,300 for residential building; $2,062,300 for public works and utilities, and $1,617,400 for non-residential building.

For the year to date construction undertaken in the metropolitan area was valued at $829,483,200, as against $1,012,191,500 for the corresponding period ending November 8, 1929.

MIDDLE ATLANTIC

Decline in Volume Is Evident

PLUMBING and heating interests in the Middle Atlantic section report a general decline in trade volumes for the past fortnight, and in some cases since the first of November. Several of the large wholesalers interviewed indicated that their business for October in point of volume was the best month of the year, but recently, as has been characteristic of the whole year, a slackening took place. A seasonal recession in this industry is expected at this time, but in past years a satisfactory demand for materials has usually extended into the first two weeks of November. Exceptions to the conditions expressed above are noted by wholesalers in the more stable or wealthy centers, where less fluctuation has occurred and business has held a more even level from month to month and is approximately equal to last

year's totals. Replacement work evidently occupied the greater amount of contractor activity in this section during the past few weeks, as new construction continued to lag.

With the end of the year approaching, manufacturers are receiving comparatively few stock orders but some of the wholesalers are taking advantage of the present prices and replenishing their inventories.

Steel pipe producers' salesmen say they have received small quantity commitments for stock and are of the opinion that purchases of this kind are the last of the year type to strengthen exhausted stocks. This condition has given a better sales aspect to the fortnight than the first two weeks of the month showed as far as steel pipe was concerned.

Wrought iron and brass pipe continue to have only a moderate contractor demand, with little change since the last period, while soil pipe, fittings and other rough materials are not comparable with other years. Plumbing finishing goods such as pottery, enameled ware and plumbers' brass goods did not experience any appreciable change during the fortnight and still have only a moderate contractor requirement value. Range boiler producers report little change in wholesaler demand, but are gratified at the continuance of a firm and unchanged price situation.

Heating activity is reported by all concerned to have slackened to a marked degree since last month, when business in this commodity was the brightest side of the industry. Only one price change of any consequence was announced during the period, a slight increase in brass pipe having taken place. This is taken as a good sign in trade circles, a few interviewed expressing the opinion that it indicated a return to more stable prices throughout the industry. Deliveries are reasonably prompt.

Credit managers report collections as being slow in this district, especially insofar as the smaller amounts are concerned. The consensus of opinion is that credit conditions have been relieved to a considerable extent by the absence of the speculative builder in the market throughout this year.

Construction figures for the 42nd and 43rd week in the Middle Atlantic section, as reported by the F. W. Dodge Corporation, show a decline in comparison to the totals for the previous two weeks, when total contracts awarded were $8,035,800 and $5,248,700, respectively, while the 42nd week total was $3,420,500 and the 43rd week $4,506,200.

SOUTHEAST

Turnover Is Moderate

THOUGH jobbers in the Atlanta area report that a moderate turnover of material prevailed for the past two weeks, the general market tone has shown considerable improvement. The trade generally is rather optimistic regarding near-future business. Particularly is this true of the heating lines, which with the opening of the colder season in the south, has proved a leader in

THE STOCK MARKET

Range for Week Ending November 29, 1930†

Par Value	1930 High	1930 Low		*	Weekly High	Weekly Low	Weekly Close
NP	156⅜	91⅛	Air Reduction Sales Co	A	108⅜	99	105¼
NP	39¾	18	American Rad. & Stand. San. Corp	A	21½	19⅛	20⅜
25	100⅞	29	American Rolling Mills Co	A	35½	30⅛	34½
50	81½	33	Anaconda Copper Mining Co	A	39½	35¼	35⅝
NP	46½	23½	Bastian-Blessing Co	C	26½	23½	26½
NP	110¼	58⅛	Bethlehem Steel Co., com	A	66⅜	61	65⅛
100	134	115	Bethlehem Steel Co., pfd	A	119¾	116	118⅛
NP	30⅝	11⅛	Brunswick-Balke-Collender Co	A	12¼	11⅛	11⅛
NP	112⅜	37⅝	A. M. Byers Co., com	A & E	48¾	41¼	46⅜
100	114	106¾	A. M. Byers Co., pfd	A & E	106¾	106¾	106¾
100	127⅛	102½	Century Electric Co., com	F	103½	103½	103½
50	4¾	1	Chicago Nipple Mfg. Co., "A"	B	2¼	1	1
50	1½	1	Chicago Nipple Mfg. Co., "B"	B	1	1	1
25	45	39⅜	Crane Co., com	C	40	40	40
100	119½	113	Crane Co., pfd	C	116	116	116
20	21	6¾	Eagle-Picher Lead Co	H	6⅞	6¾	6⅞
NP	39¾	7	Fairbanks Co., pfd	A	9	7¼	8
NP	50½	22	Fairbanks, Morse & Co., com	A	29½	26⅜	29
100	111½	102	Fairbanks, Morse & Co., pfd	A	110	110	110
NP	20	10⅜	Greenfield Tap & Die Corp	B	11⅜	10⅜	10⅜
NP	29	19	Iron Fireman Mfg. Co	C	20⅜	19½	20
NP	148⅜	61¾	Johns-Manville Corp., com	A	70½	65½	69
100	123½	118¼	Johns-Manville Corp., pfd	A	121⅛	121⅜	121⅛
100	123½	118½	Jones & Laughlin, pfd	A & E	121	120½	121
NP	76¼	39½	Minneapolis-Honeywell Reg. Co., com	A	42	42	42
NP	73	34	Modine Mfg. Co	B & C	40	36	40
NP	34	14½	Motor Wheel Corp	A	18¾	15⅝	17
NP	49½	34⅜	F. E. Myers & Bro. Co., com	A	41	39	40⅞
100	105	101½	F. E. Myers & Bro. Co., pfd	A	104½	104½	104½
100	189½	115	National Lead Co., com	A	122½	118	120¾
100	144	138⅛	National Lead Co., pfd. "A"	A	141⅛	140	141
100	119⅞	116	National Lead Co., pfd. "B"	A	118½	118	118½
NP	4½	⅞	National Radiator Corp., com	A	1⅜	1	1⅜
NP	11	2½	National Radiator Corp., pfd	A	2½	2½	2½
5	31⅜	14	Herman Nelson Corp	B	14¼	14	14
NP	76	65	Ohio Brass Co., "B"	B & G	65	65	65
NP	30	10	Revere Copper & Brass, Inc., com	A	12½	12½	12½
NP	104	85	Revere Copper & Brass, Inc., pfd. "A"	A	85	85	85
NP	3	¾	Richmond Radiator Co., com	B	¾	¾	¾
NP	12	3½	Richmond Radiator Co., pfd	B	3½	3½	3½
NP	33	21	Rud Mfg. Co	C	22	22	22
NP	37¾	19⅞	Spang, Chalfant & Co., com	A	28	27¼	27½
100	96	92	Spang, Chalfant & Co., pfd	A	94	93½	94
NP	32½	17	Time-O-Stat Controls Co., "A"	C	17	17	17
NP	106⅜	54	Union Carbide & Carbon Corp	A	63½	59⅜	62½
20	38¼	18½	U. S. Cast Iron P. & F. Co., com	A	30⅞	27⅜	29½
NP	21	15⅝	U. S. Cast Iron P. & F. Co., 1st pfd	A	18	17½	18
NP	21¼	18½	U. S. Cast Iron P. & F. Co., 2nd pfd	A	21⅛	21⅛	21⅛
NP	55	23	U. S. Radiator Corp., com	B & D	27	23	23
100	100	100	U. S. Radiator Corp., pfd	D	100	100	100
NP	35	11	U. S. Rubber Co., com	A	17	12¼	15¾
100	63⅞	21	U. S. Rubber Co., pfd	A	31⅞	23½	29⅛
100	198¾	138	U. S. Steel Corp., com	A	149½	142¾	147¼
100	151¼	141	U. S. Steel Corp., pfd	A	146	145½	145¾
NP	9	2⅛	Universal Pipe & Radiator Co	A	2¾	2¼	2⅜
NP	42⅜	15⅞	Walworth Co	A	16⅞	15⅜	16⅞
NP	19	7⅛	Wayne Co., com	B & C	7½	7⅛	7⅛
NP	35	25	Wayne Co., pfd	B & C	25¼	25	25¼
100	110	93	Wheeling Steel Corp., com	B	110	108	110
100	135½	131½	Wheeling Steel Corp., pfd. "A"	B	133	133	133
NP	29¾	16	Williams Oil-O-Matic Htg. Corp	C	16	16	16
NP	150¼	70	Youngstown Sheet & Tube Co	A	75	75	75

*Where listed—
A—New York Stock Exchange
B—New York Curb Exchange
C—Chicago Stock Exchange
D—Detroit Stock Exchange
E—Pittsburgh Stock Exchange
F—St. Louis Stock Exchange
G—Cleveland Stock Exchange
H—Cincinnati Stock Exchange

†If there is no trading during the current week, range represents last week recorded.

sales. Numerous inquiries regarding future delivery orders, and the increasing amount of repair and modernization work has brought the market out of the doldrums and has paved the way for a small but encouraging upward trend in business.

Jobbers, however, are continuing the policy of close range ordering and are depending upon the quick-shipping facilities of the manufacturers for stock replacements. Most observers are of the opinion that factory commitments will continue to specify small quantities for some time now that the inventory season is approaching.

Credit conditions continue to show improvement and jobbers are reported alert to keep this important feature of business well in hand.

Construction work is holding its own, according to advices from the offices of the local building inspector. The residential type of construction is showing improvement, and this is true of industrial types, too, it was said.

Movement in enameled ware and pottery goods was reported as moderately good. Soil pipe and fittings and brass pipe showed little activity. Boilers and radiators continued in active demand. Range boilers were reported as moving slowly.

The master plumber is fairly well engaged, it is reported, with the bulk of his business in modernization and repair work.

Manufacturers' representatives are actively combing the territory for business, with the result that more business is being found than when this campaign was not so thorough.

There have been no reports of delays in securing items from manufacturers. Local jobbers are maintaining small but sufficient stocks to care for the immediate requirements of the trade.

The Metal Market

	Nov. 25	Average Oct., 1930	Average Aug., 1930	Average 1929
PIG IRON—				
No. 2 foundry, Chicago	$17.50	$17.50	$17.50	$20.00
PLATES AND SHEETS—				
Steel boiler plates, Pittsburgh, per lb.	1.60c	1.60c	1.65c	1.93c
Blue annealed sheets, No. 13, Pittsburgh, per lb.	2.05c	2.15c	2.15c	2.17c
Black sheets, No. 24, Pittsburgh, per lb.	2.35c	2.40c	2.50c	2.85c
Galvanized sheets, No. 24, Pittsburgh per lb.	2.90c	3.00c	3.10c	3.57c
TIN—				
Straits tin (spot)	25⅝c			
LEAD—				
E. St. Louis	4.95c			

The Old Metal Market
Dealers' Buying Prices

	Per lb.		Per lb.
Aluminum clippings	12 c	Copper, light	7½c
Block tin pipe	18¾c	Heavy copper and wire	8¾c
Brass, light	4¾c	Faucets and valves	7 c
Brass, heavy mixed	6½c	Lead, heavy	3¾c
No. 1 comp. red brass	7½c	Solder joints (close cut)	6¾c
Heavy crucible copper	8¾c		

NOTE: Prices are those quoted on Tuesday of this week.

PACIFIC COAST

Remodeling Movement Gains

BUSINESS in plumbing and heating on the Pacific Coast, according to the majority of reports, is holding at close to the same level as has prevailed for the past several months. Materials of all classes are in more or less moderate demand. Jobbers, for the most part, are maintaining their stocks at fair working levels and are purchasing only as current needs warrant. Consequently, orders reaching manufacturers' salesmen are ordinarily for small quantities, and, with few if any exceptions, this business is taken care of promptly by producers. Since our last review, no changes have been announced by manufacturers serving this territory in their published prices to distributors.

A recent check up of various classes of plumbing material indicates that the volume of business in this territory is approximately 30 per cent lower than a year ago at this time. This survey did not take into consideration the dollars and cents angle of business, being confined strictly to tonnage.

While the price situation in the southern part of California is reported unfavorable, in other sections of the Coast this phase of business is fairly satisfactory when the demand for material is considered.

Agricultural products are being sold at fairly good prices in this territory, which is a favorable factor to business generally.

The time payment plan of selling plumbing and heating products is receiving considerable publicity on the Pacific Coast, and reports indicate that the remodeling idea is taking hold in the territory.

Finishing products such as enameled ware, pottery and plumbers' brass goods, were called for by master plumbers at about the same rate as prevailed during the preceding fortnight. In the main, ordering was confined to small quantities in accordance with the actual requirements of the trade.

Little change was noted in the demand for steel pipe in comparison with the preceding two weeks. Soil pipe, too, moved at a moderate rate, with jobbers purchasing as actual needs arose. Wrought iron pipe enjoyed about the same turnover as has prevailed for the past several weeks. The fittings market was unchanged as far as price and demand were concerned.

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The Wholesaler's Future*

To properly serve manufacturers, many wholesalers must do a better job of selling than they have done in the past few years. When a wholesaler requires a manufacturer to furnish specialty salesmen to call on contractors as well as architects and owners he is saddling upon that manufacturer a portion of the selling expense which the manufacturer must absorb and eventually deduct from his differential to the wholesaler.

* From Bulletin of Central Supply Association.

Bank Looks for Early Trade Upturn

THERE is an increased feeling in business circles that the country is at or near the "bottom" of the economic depression and that some progress may be expected to appear at any time, states the Guaranty Trust Company of New York in the current issue of The Guaranty Survey, its monthly review of business and financial conditions in the United States and abroad.

"While not much can be cited by way of concrete evidence to support this view, the very fact of reviving confidence is a factor of no small influence, which may prove to mark the turn," the survey continues. "One of the country's leading bankers, in a recent public utterance, summarized the general feeling of the business community when he said that 'the extreme of our depression is probably as unwarranted as the extreme of our exaltation was fourteen months ago.'

"Current reports contain a curious mixture of favorable and unfavorable factors. On the one hand, there is an unmistakable continuation of the decline in industrial output and the volume of trade that has been under way for a year and a half.

Trend of Prices Encouraging

"On the other hand, the movement of stock prices, commodity prices, and bank credit, three highly important influences on the general trend of business, have all been such as to suggest that the process of readjustment is moving into its final stages. The stock market, after declining to a new low level for the current movement in the early part of the month, experienced several consecutive days of rapid recovery. While it would be rash to conclude that the rally marked the turning of the tide, the behavior of prices in the face of unfavorable industrial reports was distinctly encouraging. If the upward trend continues, it cannot fail to exert a stimulating effect on business sentiment.

"Even more direct in its favorable implications is the increasing tendency toward stability of commodity prices. The spectacular advance in the price of copper this month was accompanied by a general firming tendency in the other leading metals. Prices of farm products, which sank to very low levels in the latter part of October and the early days of November, have recovered to some extent during the last fortnight. Similar improvement is visible in several other directions. The wholesale price index of the Guaranty Trust Company shows only a slight decline for the month ended November 15, standing at 59.0, as compared with 60.0 last month and 81.4 a year ago.

Credit Situation Favors Recovery

"Finally, there has been a noticeable increase in bank loans for commercial purposes. The latest report of Federal Reserve member banks shows total loans, other than those secured by stocks and bonds, of $8,763,000,000, which is the largest figure reported since last March and compares with $8,402,000,000 in June. Although this increase has been offset by the decline in security loans, the investments of the banks have continued to rise. The total amount of loans and investments, therefore, stands at the highest point reached in about a year.

"In spite of the moderate increase in commercial bank loans, the credit situation continues to point to extreme ease in money markets for some time—probably until the process of business recovery is well under way. There has been no appreciable increase in borrowing from the Federal Reserve banks, and the ratio of reserves to deposit and note liabilities remains above 80 per cent. Moreover, there was a rather large import gold movement last month, and some substantial shipments have been received since the beginning of November.

"With these conditions all tending to bolster confidence and promote recovery, the further declines in output and distribution have occasioned no alarm. On the contrary, business sentiment appears to have improved in the course of the last few weeks.

Definite Improvement in Textiles

"In recent months the cotton textile industry has shown more distinct signs of progress than any other major industrial group. The outstanding feature of the industry is the progress that has been made in adjusting output to the rate of demand. The result is that stocks of finished goods have been reduced to a point where they no longer represent a strong depressing influence on prices.

"Shipments of standard cotton cloths last month were 18 per cent in excess of production during the same period, resulting in a decline of 10½ per cent in stocks. The situation is considered better than it has been at any other time in the past year.

"The significance of this condition is not confined to the textile industry alone but has a direct and important bearing on the outlook for raw cotton. Cotton is one of the few major farm products that have increased in price during the past month. Although the price is still at a very low level, quotations of raw cotton and of finished cotton goods usually move in fairly close sympathy, and any factor that exerts a marked effect on the one is commonly reflected in the other as well. Any price advance, therefore, that may result from the marked improvement in the statistical position of the textile industry should have a favorable effect on the market for raw cotton.

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Jobber Boosts Volume With Specialties

ONE wholesaler who found it better to look for things to sell rather than for reasons not to sell writes us:

"We are more sold on specialties today than ever, due to the fact that if it had not been for our specialty lines, our business this year would be a bad story. Due to our activities on specialty lines, we have been able to keep our volume about the same as last year in spite of the fact that our plumbing business has been much less than last year.

"You will note by the enclosing envelope that we have added —— washing machines and —— electric ironers to our line. We have had these lines some five or six weeks and to date we have sold about three-fourths of a carload of —— washing machines and in the neighborhood of two dozen —— ironers. These lines work in very nicely with the plumbing line and we believe they will prove a wonderful asset to our business."

Rate of Returned Goods Is Too High

By DR. T. N. BECKMAN, Merchandising Counsellor, N. P. S. A.*

I RECENTLY had an opportunity to examine the records of six distributors of plumbing and heating supplies located in a middle western city. The returned goods item attracted my attention. Of the six concerns one had a returned goods percentage based on net sales of 2.9; the next showed returned goods of 4.5 per cent; and the others had returned goods percentages of 6.2, 6.5, 6.6 and 7.4, respectively. In other words, four out of the six distributors had more than 6 per cent of their net sales returned for one reason or another, while the range for the six firms was from 2.9 to 7.4, or a difference of 4.5 per cent between the most successful and the least successful firm from the standpoint of returned goods.

Every distributor of plumbing and heating supplies will concede at once and without argument that such high percentages of returned goods are a serious menace to business profits. They are a drain on the health of the enterprise that need to be reckoned with. All returned goods involve losses. The goods must be reentered on the various records, kept in stock, resold, rebilled, etc. Sometimes goods must be reconditioned.

To be sure, a certain amount of returned goods must be expected. Some items may come from the factory defective, others may have been shipped or delivered wrongly. There may be other valid reasons why a small percentage of the goods that are sold are and should be returned for credit. An analysis of the real reasons for the large percentage of returns as shown in the six cases studied may reveal, however, causes which can and should be remedied.

When making a study of the problem of returned goods, the analysis should be made, first, by merchandise departments; second, by salesmen; third, by customers, and fourth, by reasons.

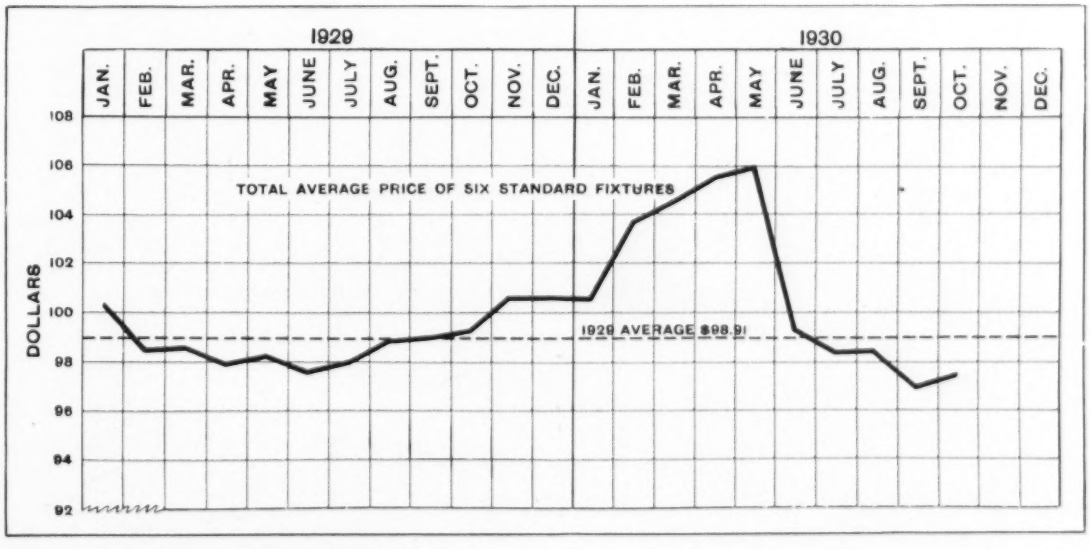
In this manner will it be possible for you to discover just what items or lines of merchandise cause the most trouble? You can then take the necessary steps to remedy the situation. It may be that a certain manufacturer's line is responsible for a considerable percentage of the returns on account of defects in the merchandise.

The analysis by salesmen may point out the "weak sisters" who sell much of their merchandise more or less on approval, with the understanding that if the goods prove unsatisfactory they should be returned. One such case was actually discovered in a certain house where one salesman was responsible for practically 30 per cent of all returns. He used that method to clinch a sale, for lack of better salesmanship tactics.

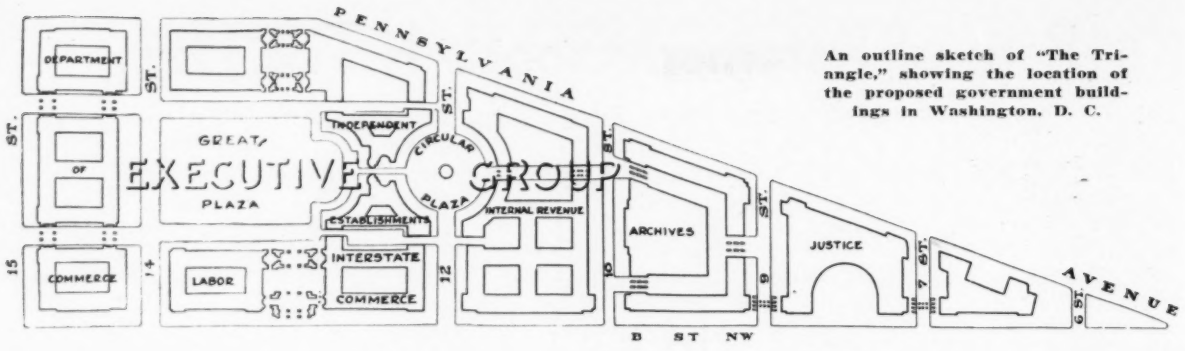
The most important analysis, however, is the one which aims to discover *reasons for returns*. Among these reasons may be customer error in ordering, house error in filling the order, defective merchandise, salesman's error in taking the order or in advising the wrong merchandise, error in pricing, overcharge, consignment or on approval sales, etc. Once such a diagnosis has been made it is then possible to determine which causes can be eliminated or minimized and the necessary steps will naturally be taken to bring this about.

In conclusion, let me state that there is no real reason why the percentages of returned goods should be so high in the plumbing and heating industry. Any percentage over 3 or 4 should be a ground for investigation and analysis, with a view to improving conditions in this respect. The solution to the problem of returned goods is largely in the hands of the distributor himself.

* From the Official Bulletin, National Pipe & Supplies Association.



The above chart shows wholesale prices of standard plumbing fixtures for a six-room house for the year 1929 and the first nine months of 1930, as collected by the Bureau of the Census from reports of twelve representative manufacturers and wholesalers. The dotted line across the chart is the average price for 1929, which was $98.91.



An outline sketch of "The Triangle," showing the location of the proposed government buildings in Washington, D. C.

National Government Spends $332,000,000 On Construction

THAT the national government in Washington, D. C., like many private enterprises in this country, is taking advantage of the low cost of construction to prepare for future needs and at the same time help to stimulate building activity and relieve unemployment among the building trades, is evidenced by the tremendous amount of governmental construction that is either under way or about to be started in the District of Columbia.

It is estimated that the building program of the national government, including both the District of Columbia and the Capital architect's office totals more than $132,000,000. This sum was made available at the last session of Congress for the purpose of relieving unemployment, and, in addition, approximately $200,000,000 was set aside for public buildings and work throughout the country. In other words, the national government is spending some $332,000,000 on construction.

The scene of the governmental construction activity in Washington is in a section of the city known as the "Triangle." What is termed the "Triangle" area is a plot of ground of about 70 acres (as shown in the accompanying diagram) in the northwest sector of the city, bounded by Fifteenth street on the west, B street on the south, and having the famous Pennsylvania avenue as the hypotenuse for the right angle thus formed. This area, formerly occupied by private business enterprises, was taken over by the national government in order that its various administration buildings might be conveniently and artistically grouped.

The following buildings have either been completed or are in the process of construction in Washington:

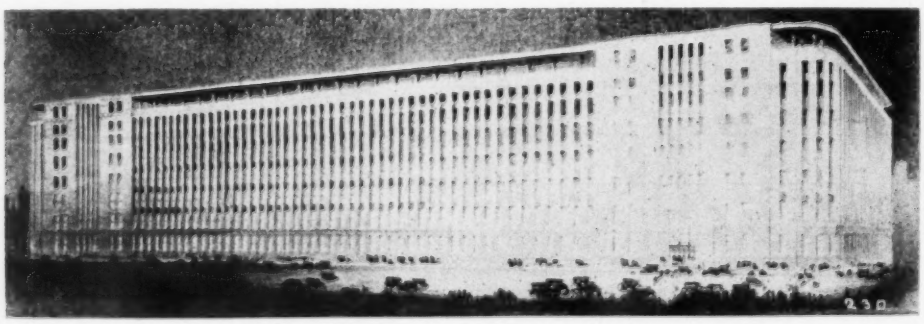
Internal Revenue building	$ 7,000,000
Department of Commerce building	17,000,000
House Office building	7,500,000
Supreme Court building	9,500,000
Senate Office building	3,886,000
	$44,886,000

Plans are being prepared for the following projects in the city of Washington:

Archive building	$ 8,750,000
Interstate Commerce building	4,000,000
Department of Justice building	10,000,000
Department of Labor building	4,750,000
Post Office building	10,300,000
State, War and Navy building	3,000,000
National Institute of Health building	750,000
	$41,550,000

The projects listed above will cost in the neighborhood of $86,436,000, but other work to be done in the District of Columbia is expected to add another forty-five million dollars to the sum, making a grand total of about $132,000,000.

For building projects planned for other than the District of Columbia, Congress has provided $200,000,000. One of the largest is the new Chicago post office. This building, which is to be erected on a six-acre plot, bounded by Harrison, Polk, Clinton and Canal streets, in Chicago, will cost approximately $21,000,000.



Architect's drawing of the proposed post office building for Chicago

Indianapolis Regional Management Conference Draws Big Crowd

Master plumbers, wives of master plumbers, office help, journeymen, wives of journeymen, and salesmen for supply houses, to the number of 425, attended the regional management conference at Athenaeum hall, Indianapolis, Ind., on November 5. The conference was held under the sponsorship of the Indianapolis Merchant Plumbers Association and was directed by Joseph G. Hildebrand of the Plumbing and Heating Industries Bureau.

The meeting at Indianapolis was the twelfth of the eries of regional management conferences organized nd conducted by Mr. Hildebrand during the last three months. It was the largest in point of attendance—its nearest rivals for this distinction being the Minneapolis conference at which the attendance was 375 and the Milwaukee Conference, with an attendance of 335.

The program consisted of a prologue demonstrating the correct and incorrect business use of the telephone in a plumbing office presented by employes of the Indiana Bell Telephone Company and the following one-act sketches: "The City Plumbing Company," "Selling an Electric Dishwashing Sink," "Partners?" "Trying to Get an Extra One Hundred Dollars," "How the Journeyman Should Go Into the Home," and "A Master Sale."

As in the previous regional management conferences, all the actors, with one exception, were employes of supply houses or contractors in Indianapolis.

Following is the cast for the play "The City Plumbing Company": The office girl, Miss Barbara Tschan, Crane Co.; Mrs. Consumer, Mrs. Olivia Orth Anderson of the Wisconsin Players, Milwaukee; the journeyman, "Al" Steinhilber, Central Supply Co.; the salesman, John Irvine, Leader Specialty Co.; the master plumber, Pete Van Fleet, Crane Co.

The playlet "Selling an Electric Dishwashing Sink" was presented by Charles Moody of Kohler Co. and Mrs. Anderson.

Wm. Dwyer of the Central Supply Co. and George Hench of the Standard Sanitary Mfg. Co. were the "Partners." Like many other partners, they are partners in name, but their ideas as to how the business should be run are, at the beginning of the play, quite different.

George Hench and Mrs. Anderson demonstrate the methods in "Trying to Get the Extra One Hundred Dollars." Mr. Hench is the master plumber and Mrs. Anderson is the housewife.

"How the Journeyman Should Go Into the Home" was demonstrated by Mr. Steinhilber.

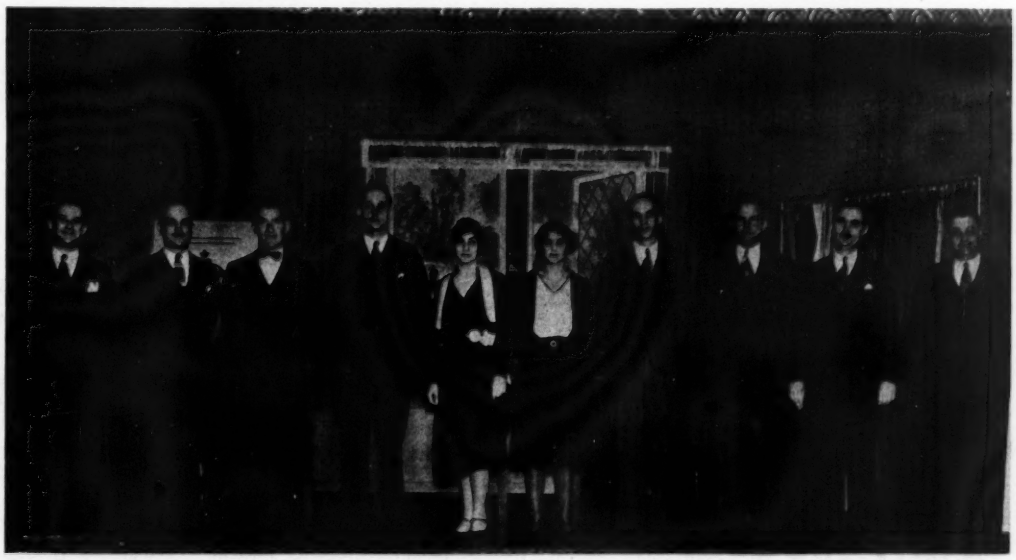
The cast of the final playlet "A Master Sale" was as follows: Frank Weber of the Hoffman Specialty Co. as the master plumber; Mrs. Anderson as the housewife; and E. P. Cook of the Central Supply Co. as the husband.

The success of the Indianapolis meeting was due to the co-operation of the individuals and the supply houses mentioned above and the following: G. T. Watson, secretary of the Indianapolis Merchant Plumbers Association; Frank E. Irish and Elmer Wiebke, members of the association; Robert McGill of Crane Co.; Carl Weiland, of the Central Supply Co., and R. E. Jansing of the Standard Sanitary Mfg. Co.

◆

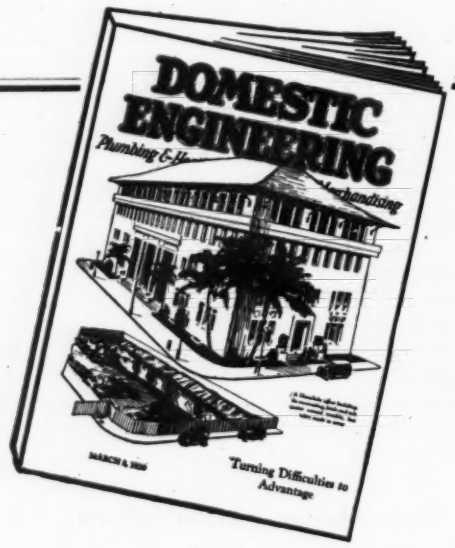
Zone Meeting Held at Belleville

A zone meeting of the Illinois Master Plumbers' Association was held recently at Steve Ehrhart's Inn just outside of Belleville, Ill. Fred R. Bailey, of Rockford, first vice president of the state association, called the meeting to order and acted as chairman. George Hirth, president of the zone, pointed out the importance of such meetings. Mr. Schlegel of Karr Supply Co., Belleville, discussed business conditions



The cast which presented the plays at the Regional Management Conference at Indiannapolis. From left to right: Frank Weber of the Hoffman Specialty Co.; E. P. Cook and "Al" Steinhilber, both of the Central Supply Co.; George Hench of Standard Sanitary Mfg. Co.; Olivia Orth Anderson of Milwaukee; Barbara Tschan of Crane Co.; John Irvine of the Leader Specialty Co.; Charles Moody of Kohler Co.; Wm. Dwyer of Central Supply Co.; and Peter Van Fleet of Crane Co.

What do you want?



Are you looking for a new man in your organization? Perhaps a salesman, an estimator, a man with a good jobber or contractor following—a man capable of building up new territories?

Turn to the classified advertising pages of this issue of DOMESTIC ENGINEERING. Look over the "Situations Wanted" ads. If the man you want isn't advertising there, send us your requirements and we'll place your ad in the "Situations Open" column and you'll get results.

In DOMESTIC ENGINEERING's classified advertising pages, you have a choice of the best, no matter what you want.

Eight cents a word is the rate.

DOMESTIC ENGINEERING

Plumbing & Heating Contracting and Merchandising

1900 Prairie Avenue Chicago, Illinois

Top row: Stephen Ehrit, Belleville, and Chris. Schaulat, Collinsville. Bottom row: Tom J. Fleming and George Brunner of Alton, C. H. Bolton, State secretary

and called attention to new buildings now under construction. Mr. Ivey, manager of the East St. Louis branch of Standard Sanitary Mfg. Co., and Mr. Niehause of the American Radiator Co., also discussed business conditions. Geo. S. Brunner, secretary of the Alton association, speaking on the same subject, said: "If business is bad it is nobody's fault but our own."

The value of merchandising was stressed in the address of W. F. Fischer of Collinsville. Otto Goss of Belleville urged that a membership drive be put on by the association, and that all plumbers in the district be asked to join the association. Another speaker at the meeting was F. Greiser of Danville, who expressed his pleasure in being there, and discussed the coming state convention to be held in Danville.

◆

Montreal Association Gives Banquet

There was a marked note of confidence at a recent banquet of the executives and members of the Master Plumbers' Association of Montreal, Canada, in the Queens Hotel, Montreal.

W. A. Cambridge acted as chairman, with J. E. Walsh, an ex-president of the association, filling the role of master of ceremonies. Seated at the right of the chairman was Holt Gundy of Toronto, who in the course of a brief address, told the members of the association of the opportunities lying ahead. Alderman Tancrede Fortin reported that the City Executive was watching with the closest interest the growth of an association which is doing so much for the public weal.

Other speakers were J. Francoeur, J. Belisle, A.

Belanger, J. Quigley, A. Cousineau, G. Poirrier, N. Walsh and C. Smallpiece. Among those at the head table were W. J. Bethune, John A. Gordon, R. Rousseau, John Colford, P. Largye, John Watson, and James Griffin.

An elaborate program of song and dance was put on under the direction of Hercule Lavoi who was warmly applauded for his efforts to please. All the addresses were limited to five minutes.

◆

Heating, Ventilating and Plumbing Course Offered

Heating, ventilating and plumbing in public buildings will be among the subjects under discussion at the Manitowoc Vocational School during the current Fall semester. The school has established a course relating generally to the maintenance of buildings, which will be under the direction of Professor Ben Elliott and others from the University of Wisconsin. The class will meet weekly in the council chambers at the city hall for a period of eight weeks.

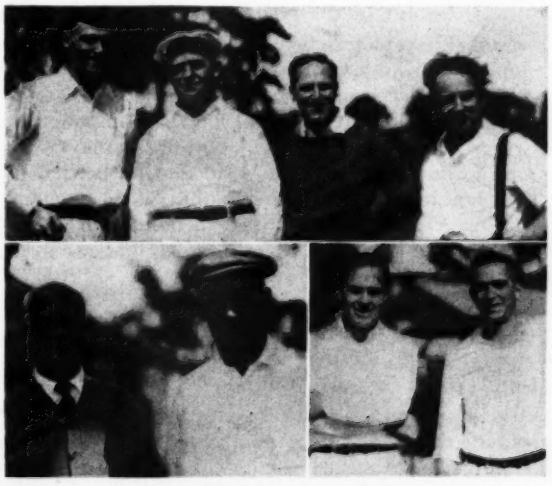
◆

Chicago Plumbing Contractors Close Golf Season

The concluding 1930 tournament of the Plumbing Contractors Association of Chicago was held October 9 at the Tam O'Shanter Golf Club. This association has had a thoroughly successful golf season, its monthly meetings drawing an average attendance of 60 to 70 players.

The prizes for members in Class A were won by W. G. Zeigler, J. S. MacKenzie and Charles W. Jones. Class B prizes for members were won by W. J. Sievert, Charles Haigh and Joseph W. Cannon. In the division of Class C, T. W. Merryman, R. J. Weber and Al. Grosch were successful.

The guest prizes in Class A were won by F. Ockerlund, Howard Crum and M. Schulhoff. For Class B the prizes were won by M. A. Nelson, F. J. Wagner and R. V. Sawhill. The blind bogey for guests was won by Jos. Comer. Wm. R. Brookman, G. Telef-



Top row: H. R. Pillar, E. C. Wagner, E. A. Ehrlich and Dr. MacCollum. Bottom row: I. Weil, Weil-McLain Co.; William J. Woolley; Porter West, C. F. Church Mfg. Co.; J. M. Grace, Imperial Brass Mfg. Co. Photos taken at the Big Oaks meet of the Plumbing Contractors' Association of Chicago

MERRELL

PIPE THREADING (For BETTER threads) MACHINES

With the same care for details as that given to the minute parts of airplanes, Merrell builds its pipe threading machines.

Nothing has been overlooked to make them models of rigidity, accuracy and efficiency. Minimum die changes for all jobs; maximum ease of handling all at a price that makes Merrell worthy of your immediate investigation.

Write today for the details

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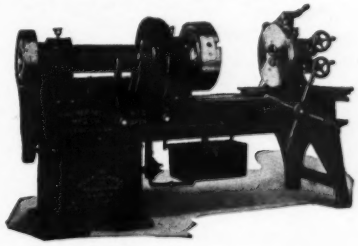


Ozite
Pipe Covering
For Cold Water Lines

Almost everlasting, Ozite Pipe Covering of Standard Hair Felt is the economical answer for cold water pipe covering. It gives great protection against freezing, and successfully prevents "sweating" or condensation on pipes. Write today for further facts, and sample. No obligation.

AMERICAN HAIR & FELT CO.
18th Floor—Merchandise Mart
CHICAGO

Top row: John B. Kennedy, J. J. Dervan, treasurer, both of American Tube Works, Boston, Mass.; W. R. Thomas, L. Garvin, both of Drackett Chemical Sales Co., Cincinnati, Ohio; R. J. Welch of Lowell, Mass., past national treasurer; Henry Noe, Central Foundry Co., New York City. Bottom row: John W. Dawber, E. N. Detrich, both of Radintor Specialty Co., Charlotte, N. C.; W. C. Price of Stanley G. Flagg & Co., Philadelphia, Pa.; J. H. Holmes, A. M. Byers Co., Boston, Mass.; A. B. Delany, Coyne & Delany Co., Brooklyn, N. Y. Photos taken at Boston convention of the N. A. M. P.

son, Ed. Young, Art Jolliffe, Joseph Carroll, John Madden, C. E. Pullum, Herman Scheel, Henry Diedesch, Clyde Savage, H. R. Pillar and E. Lind won the flight prizes. The qualifying prize went to Edward Payne and the blind bogey for members to Charles S. McKay.

The scores for the tournament were:

	G.	H.	N.		G.	H.	N.
Barrows, Chas.	103	19	84	Matthews, Geo.	135	39	96
Blair, John	113	27	86	Merryman, T. W.	106	28	78
Bolton, C. A.	117	24	93	Mortimer, Ed.	104	19	85
Boosey, A. M.	102	19	83	Murphy, R. E.	125	40	85
Brookman, Wm.	120	33	87	Nelson, M. A.	93	23	70
Brown, W. A.	143	33	110	Nilson, G. A.	101	19	82
Cannon, Jos. W.	103	27	76	Oakes, E. C.	114	18	96
Carroll, Jos.	91	13	78	Ockerlund, F.	91	20	71
Chellberg, John.	114	23	91	Payne, Ed.	96	19	77
Comer, Jos.	81	10	71	Pillar, H.	129	36	93
Crum, Howard.	91	19	72	Pullum, C. A.	113	31	82
Diedesch, H. H.	118	29	89	Renich, W. E.	110	22	88
Dreier, Chas.	121	26	95	Savage, Clyde	103	20	83
Erickson, C. J.	108	19	89	Sawhill, R. V.	104	23	81
Fabbri, Frank	108	23	85	Scheel, Herman.	108	27	81
Flinder, R. C.	101	12	89	Schulhoff, M.	94	18	76
Grosch, Al.	123	40	83	Sells, Robt.	89	7	82
Haigh, Chas.	99	24	75	Sievert, W. J.	97	22	75
Hoelscher, Ed.	114	28	86	Telefson, Glen.	95	19	76
Jolliffe, Art.	96	16	80	Thumm, Chas.	105	21	84
Jones, Chas. W.	97	15	82	Wagner, Fred.	107	37	70
Knauss, Wm.	115	28	87	Weber, R. J.	109	29	80
Lind, Elmer C.	108	22	86	Weil, Isadore	107	20	87
MacKenzie, J. S.	95	18	77	Winkler, G. F.	111	24	87
MacKenzie, K.	110	24	86	Young, Ed.	101	21	80
MacGregor, J.	106	15	91	Zeigler, W. G.	90	18	72
Madden, John	111	29	82	Zimmer, Fred	108	16	92
McKay, Chas.	110	29	81				

◆

Utah Associations Increase Memberships

The Utah State Association is now one hundred per cent organized at Toole, according to Mr. Rupea. The two latest masters at Toole to join are the Parley Bryan Plumbing Company and the J. Alex Bevan Plumbing and Hardware Company.

The Salt Lake City Sanitary and Heating Engineers Association, which is a member of the State organization and of which Mr. Rupea is also secretary-manager, has received the applications for membership of the Jarman & Burns Plumbing Company and the Aldous Bros. Plumbing Company.

Alameda County Masters Secure Gas Company Co-operation

The Merchant Plumbers Association of Alameda county, Calif., has always seemed to have a group of crusaders among them to take on new ideas or develop some of their own when ideas are seemingly slow in arriving. This association co-operated with the National Home Modernizing Bureau, and attempted to crystallize that idea into a local bureau. However, the spirit of organization in most other lines of the building industry was and is weak, and the master plumbers found themselves carrying the whole burden, so that idea was not a roaring success.

However, that effort was far from being a total loss as is evidenced by the fact that the rank and file of the membership caught that idea, and each gathering discloses the fact that individual members continuously succeed in developing some mighty interesting jobs out of the simplest repair job.

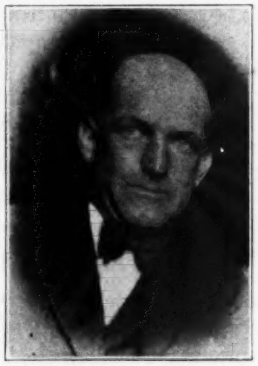
The most interesting thing showing the possible development of unexpected business came from a most unexpected source, and in fact is still going strong. The Pacific Gas and Electric Company recently brought in natural gas. Naturally they were anxious to build up their gas load and proceeded to do so as practically all other public utilities have done all over the United States, through putting on a large force of salesmen to sell gas appliances from door to door.

This problem of merchandising by public utilities which has been so vital nationally has been most successfully treated by the master plumbers of Oakland and San Francisco, Calif.

With the advent of natural gas and with the great contingent expense which the Pacific Gas and Electric Company of California faced in building the two hundred miles of large-sized mains, their problem was to see that the load on these mains was developed sufficiently to cover the capitalization of this construction work. Therefore, when the company turned loose hundreds of salesmen in the Oak-

land-San Francisco district selling all kinds of gas consuming appliances at such prices and with such turn-in allowances on old equipment as they did, the regular dealers in gas appliances faced practical annihilation.

Master plumbers felt the dire result of this program, on the part of the gas company very severely, as their entire market for gas water heaters was practically wiped out over night. Because of this, the Alameda County Association, which is largely composed of master plumbers of the cities of Oakland, Alameda and Berkeley, caused the problem to be referred to the Bay Counties Conference of Master Plumbers, which is an organization representing sixteen or more counties about the San Francisco Bay district. This organization was asked to analyze the situation and to seek a proper solution.



J. V. Young

The matter finally settled down to a general conference held at the hall of the Alameda County Merchant Plumbers Association, at which were representatives of the various master plumbers' organizations, including the state association, the Retail Furniture Dealers Association, the Furnace Dealers Association of Northern California, the Gas Floor Furnace Association, the Heating and Piping Contractors Association, the Gas Furnace Manufacturers Association, and the Gas Water Heater Manufacturers Association.

This conference resulted in the formation of an executive committee with power to treat with the gas company and to secure such concessions as might be granted whereby the merchandising of gas appliances might be saved for the established trade. This committee was composed of the following gentlemen: Geo. Stoddard, J. L. D. Keppy, J. R. Crumley, Jack V. Young, and Frank K. Runyon. This committee very wisely proceeded to absorb the point of view of the gas company and took into serious consideration the need for the company to greatly increase its load.

Realizing full well that the problem was one of gigantic proportions, the committee through its chairman, Geo. Stoddard, requested of the president of the Pacific Gas and Electric Company, A. F. Hockenbeamer, the courtesy of a conference to state the position of the dealers. Mr. Hockenbeamer immediately arranged such a conference and he selected as conferees from his company, R. E. Fisher, vice-president in charge of public relations and sales, H. M. Crawford, general sales manager, Don Ray, Public Relations, Lou F. Galbraith, division sales manager, F. U. Naylor, manager gas sales, and Frank Talcott, division sales manager.

Conferences were held weekly, the entire proceedings were stenographically reported, and every possible angle of gas appliance merchandising past,

Reg. U. S. Pat. Off.

Put in this carton, now

It'll sell the pure gum rubber **DUR-A-BAL** for you very quickly. It will make your customers see how easily they may have a tank ball that does not shrink, elongate or come apart. **DUR-A-BALS** are not affected by any water conditions. Order this carton today.

LAVELLE RUBBER CO.

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From Your Jobber

Plumbers tell us why they prefer to install ALBERENE STONE LAUNDRY TUBS

"It is no trick at all to 'walk' an Alberene fixture, particularly if it is one of the new compact two-part tubs. I've thrown away my liniment."

ALBERENE STONE COMPANY

153 West 23rd Street New York City

Rusty Water is DOLLAR DUST Washed Away

Money filings—that's what rust is. Bits of metal that the action of water bites off the inside of some hot water heaters.

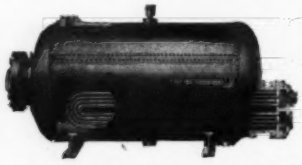
Eventually rust eats holes in the shell, then a new heater is required.

Patterson **INDESTRUCTO COPPER LINED**
Hot Water Heater

is a *permanent* investment because it is lined throughout with copper, and cannot rust. It is practically everlasting.

The Patterson Indestructo is *guaranteed* to prevent discoloration of water from rust.

Our catalog will interest you. Write for a copy.



THE PATTERSON-KELLEY CO.
106 East 40th Street New York, N. Y.

A Choice of the Best

That's what you get in replies from a DOMESTIC ENGINEERING Classified Advertisement.

No matter what your problem—if you want a job, or a man for a job, if you have some used equipment to sell or want to buy some, if you want to know what the leading books on plumbing and heating are, if you want bids on a job—a DOMESTIC ENGINEERING Classified Advertisement will solve that problem.

Domestic Engineering
1900 Prairie Avenue, Chicago, Illinois

present and future was laid before the committee. The Pacific Gas and Electric Company provided all available data for the guidance of the work, and it became very evident that the principal and only aim of the company was to increase its consumption load. With this point firmly grounded and thoroughly understood by the dealers, the problem then simplified itself into what the dealers could show was their ability to sell sufficient appliances to take up the gas load.

A careful analysis of the ability of the dealers to deliver this load to the company through established trade lines, upon their convincing the company that they could so deliver, brought about a most remarkable agreement between the Pacific Gas and Electric Company and the committee from the Gas Appliance Dealers, whereby the company agreed to co-operate to the fullest degree with the dealers and furnish to them a survey report of each building served with gas, which report was gathered by company employes at the time of the turn-over from artificial to natural gas.

These reports give in detail the type, style and condition of every gas appliance in every building, and with the aid of these very valuable reports the company said it was up to the dealers to prove themselves able to so build up the gas load that the company would not have to maintain their house-to-house merchandising campaign.

The accomplishments referred to in this article, of necessity have been the result of many months of effort on the part of this joint committee, but the specific results attained so far are that the company has practically entirely left the field of merchandising gas, steam and hot water heating, co-operating of course to the fullest degree to develop with the heating and piping contractors this very great factor in gas load development. Automatic gas water heaters are left entirely to the established dealers except in those cases where water-backs, tank heaters or combination heaters are still in use. But the established dealer is entitled to an exclusive assignment of a certain district with the complete survey report as already described, to work out any prospect in such district, and there is no limit to the number of districts a dealer may secure, provided evidence is given that the previous assignment has been thoroughly worked and sufficient reason given for those cases where a sale has proved impossible.

Standard prices are maintained, and all automatic gas water heaters sold by any company salesman are turned over to some established dealer for connection, with the standard price for connection maintained and paid to the dealer direct by the Pacific Gas and Electric Company.

Gas house heating appliances prospects are developed and sold by the company, and these are in turn furnished and installed by the various dealers.

A vast program of advertising has been carried on by the company, and throughout all this program the company has stressed the point "See your dealer," as a result of these very successful conferences.

These accomplishments are undoubtedly the result of the very considerate and tactful advances made by

the committee already referred to, of which Geo. Stoddard of Berkeley is chairman. In view of the fact that when, over eighteen months ago, this committee was commencing its work, it was the recipient of much correspondence from all over the United States telling of undesirable competition by the public utilities in merchandising, the accomplishments of this committee are worthy of great praise.

The committee is again in conference with the Pacific Gas and Electric Company, laying out the plans for merchandising in 1931. It is hoped and expected that the very good showing made by the established dealers during 1930, in creating a satisfactory load for the company, will result in the entire withdrawal of the company from the field of merchandising.

The Alameda County Association of Master Plumbers is particularly pleased to think that this accomplishment in a field that is so lucrative as to business and price was largely the result of the cooperative spirit which that association has always expressed, and also that the movement was given birth under its roof.

Cleveland Heating Contractors' Campaign

(Continued from Page 91)

the Association office is continually receiving reports of contracts to be certified and it is evident that the total number and volume of modernizing jobs will be many times the total and volume of any former year. It is at least $15,000 for September among Association members.

Cleveland's radiator heating contractors don't expect to set any record for volume and profits in 1930. They know that the great loss in apartment and high-priced home contruction, and the stringent competitive situation, cannot be overcome entirely by greater business in the small home and modernization fields. But they know that their activity in getting more small home and modernization business has been a real lifesaver, it has kept them going at a time when business has been extremely precarious, and it has started the trend toward radiator heating which will bring them increasing volume and profits in the years to come.

Possibilities for Future Business

They believe that the manufacturers, when they study the results, will realize that the campaign has been a success and that it should be continued in order that the momentum already gained may be increased in 1931. The association further calls attention to the fact that there are at least 175,000 homes in metropolitan Cleveland equipped with warm air heating. Association Manager Kinzey estimates that at least 10 per cent, or 17,500, of these home owners can be sold radiator heating in the next three years with the proper advertising program.

He says, "In the past the radiator heating contractor has accepted such modernization work as came to him, but during the last nine months he has learned that perseverance and the willingness to do sales work after dinner has brought him non-competitive work at a fair profit.

"Like the tiger who has once tasted blood, such men are no longer going to be satisfied with the 'pap' which is handed out by the average speculative builder."

The Cleveland Association has already started work

K-108A—Blake Anti-Freeze Roof Drain for Saw Tooth or Valley Roofs

K-108A

This is an entirely new design intended for the purpose of avoiding accumulations of ice and rubbish around the strainer. It is without a sump, and the arrangement of the strainer is such that it does not permit stoppage.

Clamping ring securely holds roofing material or other safety metal flashings. Strainer is fastened with square head brass bolts. Made for any pitch of roof.

Made in one size for either 4-, 5- or 6-inch pipe. Either screwed or hubbed for soil pipe.

Nothing to compare with this for efficiency.
Sold through your jobber.

Blake Specialty Co. **Rock Island, Ill.**

Sell Showers
Scores of busy business executives in your community haven't time to fill a bath tub for their morning bath. Cash in on their early morning hustle minutes. Give them this opportunity to hop into a WEISTEEL Shower Cabinet and out again all pepped up for the busy day ahead.
Set WEISTEEL Showers on any floor, against any kind of wall and connect them up. One piece construction prevents leaks. And their low cost makes them easy to sell to individuals, homes, hotels, clubs in your community.
A postal card will bring the facts . . . The HENRY WEIS MFG. CO., INC., Elkhart, Indiana.
WEISTEEL
INTEGRAL SHOWER CABINETS
Patented April 15, 1919

SYLPHON DAMPER REGULATORS

Sylphon No. 23

STEAM DAMPER REGULATOR

This instrument is one of our many Damper Regulators, and is for the regulation of dampers on steam boilers and is composed entirely of metal has no rubber diaphragms to wear out and become inoperative; is frictionless, sensitive, positive and invariable in its action. It operates with a slight change in pressure, thus closing the dampers at a very low steam pressure when desired. Sylphon Damper Regulators for hot water boilers are made in many types to fit any boiler. Both the steam and water regulators are easily installed and need no servicing.

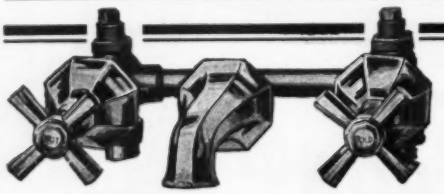
[*Write for literature*]

FULTON SYLPHON CO.
KNOXVILLE, TENN., U.S.A.

As you gain new business and the confidence of your customers by installing welded pipe systems, permanently leak-free, you will develop increasing confidence in Airco Oxygen if you give it a trial.

Its uniform quality and availability in any quantity should interest you if you are welding. If you are not, we shall be glad to explain how to gain customers, more business and even cut your overhead thru its use.

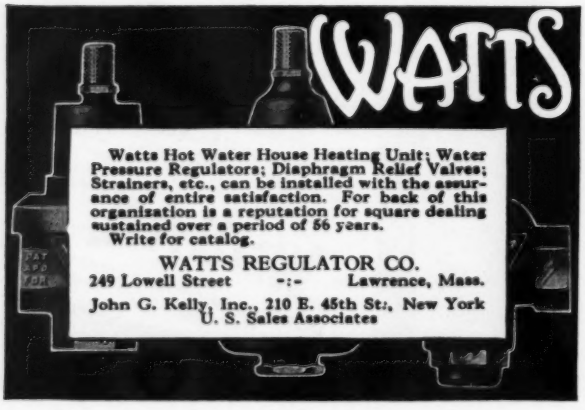
Air Reduction Sales Co.
Lincoln Bldg., E. 42nd St., New York City



No. 1520

This is one of the American tub fixtures that are so popular now with builders who want modern beauty with proven worth. Order American Brass Goods through your jobber.

American Sanitary Mfg. Co., *Abingdon, Ill.*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for 1931 with the opening of its Radiator Heating Sales School, which is being conducted by Dr. W. Harry Freda, a well-known sales instructor.

The radiator heating industry of Cleveland has already made an excellent start toward greater use of radiator heating in the homes of that city, and the future should pay greater dividends on its investment of time, money and effort.

German City Tries American Methods

(Continued from Page 100)

graph of a kitchen in one of the detached houses showing the built-in closets, shelves, sinks and electric connections, and the kitchen range and water heater is also reproduced herewith. Ordinarily, a renter must supply all of these things except the range or cooking stove himself when renting a dwelling, so the equipment is a novelty here, although common enough in America.

Plumbing Features

The plumbing installations include nothing that would be new or novel in the United States; but the idea that small dwellings should be fully equipped with plumbing fixtures in bathrooms and kitchens, or, indeed, that two- or three-room apartments should be provided with bathrooms, is something new here and has caused considerable comment. The fixtures that have been installed are similar to those in common use in the United States.

Floor plans of the largest house in the block of houses included in the group above described are shown in Figs. 3 and 4 and show the size and location of the rooms and the position of doors, windows and radiators. Two small photographs of this house are also reproduced here, both taken from within, one showing a radiator beneath the long window in the dining and living room, and the other showing the large, single-pane window in the living room.

While many features incorporated in these buildings are new and novel in this district, they contain few ideas that would be new in America; in fact, many of the novelties have been adapted from similar arrangements which have been in use for some time in the United States. However, in design, in arrangements and in community service they offer something that may be of news interest even in America.

◆

California Inspectors Hold Meeting

The Plumbing Inspectors' Association of California held a meeting at the Hotel Oakland in October. Inspectors from Fresno, San Jose, Oakland, Berkeley, Alameda, Piedmont, San Leandro, Stockton and Sacramento, attended. George Grimshaw, plumbing inspector of Berkeley, brought before the board the matter of a uniform plumbing code to be worked out along the lines of the present uniform building code, which sixty-two cities and towns in the State of California have adopted. It was decided, upon motion of Mr. Johnson, plumbing inspector of San Jose, to have a committee appointed at the next joint meeting of the southern and northern divisions to draft such a code. This meeting will be held in Fresno in December.

Questions?

ASKED BY READERS AND ANSWERED BY EXPERTS

About Loop Venting and Floor Drain Connections

Editor, DOMESTIC ENGINEERING:—I am sending two drawings, Fig. 1, showing my method of circuit and loop venting, and Fig. 2, showing floor drain connections.

The Hoover Code does not give the size of the branch vent for circuit and loop venting in Sec. 106. I figured the size of the branch vent by area, as follows: A 4-in. horizontal line is required to take care of eight water closets, ¼ in. fall to the foot. When all the water closets are flushed, I figure the horizontal line would be running three-quarters full, leaving one-quarter of the area for air circulation.

Area of 4-in. pipe = 12.566 sq. in.
¾ area of 4-in. pipe = 9.423 sq. in.
¼ area left for air = 3.141 sq. in.

The area of a 2-in. pipe = 3.141, and therefore it takes a 2-in. branch vent.

Some use 3-in. or 4-in. branch vents. Why should the branch vent be larger than the area of air circulation?

Which of the two methods, A or B in Fig. 2 corresponds to the Hoover code requirements?

Minnesota. B. W.

Fig. 1 represents an excellent installation of circuit and loop venting, correct as far as we can see, except for

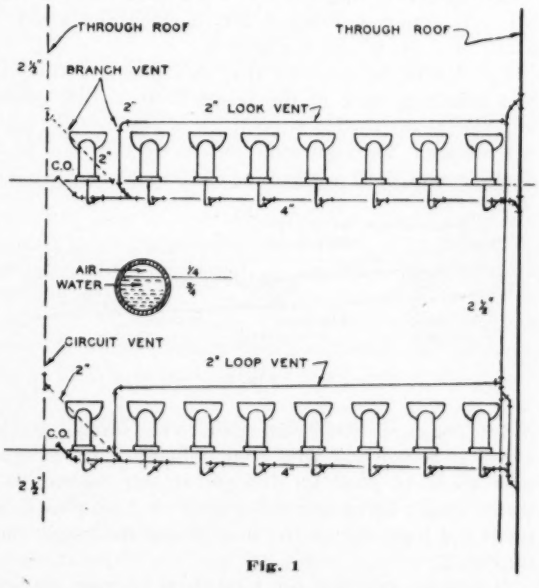

Fig. 1

the size of the vent, which is the subject on which our judgment is asked. The broken lines show circuit venting and the full lines show loop venting.

The method of discharging each water closet into a Y branch laid flat is far superior to discharging into the same fitting with the branch looking up. The method shown in Fig. 1 is to be preferred as it does not produce a curtain of water across the entrance of the branch

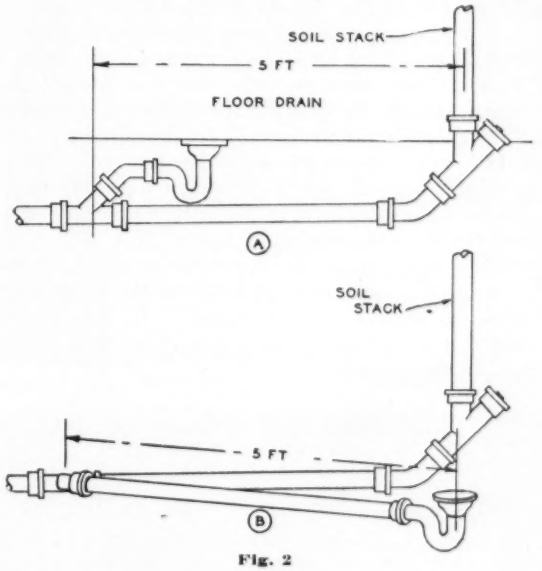

Fig. 2

whenever the water closet discharges. This curtain if it may so be called, interferes seriously with the circulation of air. Nevertheless it is comparatively seldom that plumbing codes specify the correct method of connection as seen in Fig. 1.

The use of the relief vent is an excellent method, but required only where there is a heavy discharge of waste from floor above.

Regarding the use of the 2-in. circuit or loop vent, as argued by B. W., we think he has overlooked two important points.

In the first place, more effective venting is done when the area is ample. If a vent as small as 2-inch were to be used, it would allow nothing as a margin of safety, and such a margin is always needed.

The most important point is that the size of the vent is based on the simultaneous flushing of the eight water closets, which according to B. W., would fill the horizontal line ¾ full. The probability that this would ever occur is so remote that it may be stated that it would never happen. In such considerations as this, the peak load has to be determined. The Hoover report has much to say on this subject, beginning on page 91. From the table on page 98, it will be seen that the probability

that 5 of a line of 8 water closets will discharge at the same instant is that it will happen only once in 15 years under a peak load period of three hours each day, or once in 23 years with a 2 hour peak period.

Under these conditions, there will certainly be a much greater ventilating area than one-quarter to handle, and therefore a larger vent pipe than 2-inch will be required.

According to our judgment, the following covers the requirements satisfactorily:

"Batteries of water closets may be installed with circuit or loop vents of the following sizes: 2-in. for a battery of 2 water closets, 3-in. for 3 to 6 water closets, 4 in. for a battery of 7 or more.

We are not sure that we get the correct idea of the question concerning floor drains.

The only section of the Hoover code that seems in any way to apply to this inquiry is Sec. 107, which is as follows:

"No vents will be required on a downspout or rain leader trap, a back-water trap, a subsoil catch-basin trap, or on a floor drain, provided the floor drain branches into the house drain on the sewer side, at a distance of 5 ft. or more from the base of the stack."

If Sec. 107 covers the point that has been raised, our opinion is that A covers the situation and B does not. The wording is clear, that unless the floor drain branches into the house drain at a distance of 5 ft. or more from the base of the stack, the trap would need to be vented.

According to B, the connection might be close to the stack, so long as the branch was 5 ft. long or longer, and that condition obviously would be against the intent of the section.

◆

More About Flow in Sewers and Drains

Editor, DOMESTIC ENGINEERING:—We have read with a great deal of interest the article entitled "Flow in Sewers and Drains" in the October 18, 1930, issue of DOMESTIC ENGINEERING, and we would like to know just what formula and what value you give to various constants which occurred in the formula you used in building up your diagrams which are shown in Figs. 3 and 4 on page 68.

The quantities obtained from your charts are much more favorable than those found in the charts which we happen to use, and we are merely asking the above questions because it is possible that we are using charts and formulae which are too conservative.

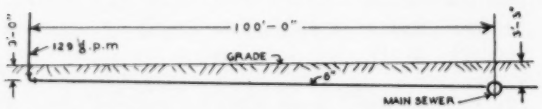

Fig. 1

We believe that a simple, easily read chart, such as you have made, is a great convenience to the industry.

Boston, Mass. M. W. J.

The curves which accompanied the above mentioned article are considered to be conservative and dependable. They were constructed from a table showing the flow in gallons per minute for a fall of 1 in., 2 in., 3 in., 6 in., 9 in., 12 in., 24 in., and 36 in. per hundred ft. and have been used a long period of time with very good results.

The formula from which the table was originally constructed can not be quoted here but checking up against Kutter's formula and using a co-efficient for "n" of 0.013 gives the following results:

	Slope per 100 ft.		
Size of Pipe	3 in. in 100 ft.	6 in. in 100 ft.	12 in. in 100 ft.
6 in.	108	153	216
12 in.	751	1066	1507
24 in.	5053	7146	....

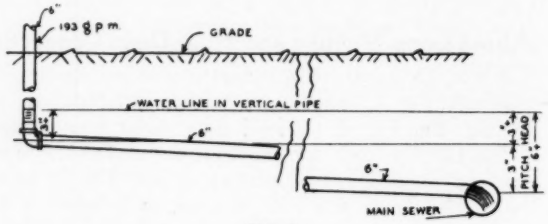

Fig. 2

whereas the amounts given in the table and from which the curves were plotted were as follows:

	Slope per 100 ft.		
Size of Pipe	3 in. in 100 ft.	6 in. in 100 ft.	12 in. in 100 ft.
6 in.	129	183	258
12 in.	730	1033	1468
24 in.	4155	5874	8303

which indicates only a slight increase in small sizes and a slight decrease in the larger sizes over the flow indicated by Kutter's formula.

There is one thing that should not be forgotten in sizing roof water lines, and that is the building up of a slight head on the high end of the line gives a result equivalent to increasing the pitch on the line. What is meant by this is illustrated in Figs. 1 and 2. In Fig. 1 a line is assumed which is 100 ft. long and which has a fall of 3 in. in one hundred ft.

Let it now be assumed that this line is a 6-in. line, and referring back to the schedule previously given it is found that this line is good for a flow of 129 gallons per minute. Through some mischance this flow is suddenly increased 50 per cent, or to 193 gallons per minute.

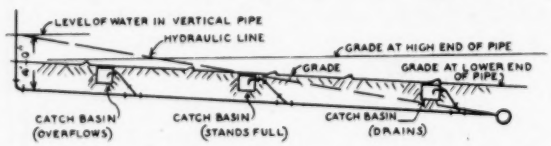

Fig. 3

What happens? Referring again to the foregoing schedule, it is found that with 6 in. fall per hundred ft. the pipe would be good for 183 gallons per minute, so the water simply backs up until a head of 3 in. plus is built up at the high end of the line, giving the result shown in Fig. 2.

It will be seen that the total drop between the water surface as backed up in the line and its lower end is a little over 6 in., and this is sufficient to discharge the 193 gallons required. Similarly if the load on the line

went up to 258 gallons per minute, the total fall must be 12 in., and with 3 in. occurring in the pipe line itself this means that the water would back up and maintain a level (or head) at the high end of the line of 12 in., 3 in. or 9 in. above the high end of the level of the horizontal pitched line.

While it is not desirable to design roof water lines so as to depend on the head (secured by backing up) to discharge the water, the fact remains that such a head usually is available to care for any short period of overload. Therefore it is possible to run a good deal closer to the limit of pipe capacity on a roof water line than it would be in a sewer.

At the same time, it should not be lost sight of that any surface drains connected into a line which is building up a head in order to discharge a given quantity of water would be subject to overflowing if the *hydraulic line* passes above the top of the drain, but would not back up if the hydraulic line passes below top of drain.

This is illustrated in the exaggerated diagram shown in Fig. 3, where the water is assumed to rise 48 in. in the high end of the line in order to discharge the quantity coming down from the roof. The hydraulic line is a straight line drawn from the water level at the high end to the discharge outlet of the pipe at the low end. It will be seen that this line is above the inlet of the first catch basin, intersects the top of the second and is below the inlet of the last catch basin. Therefore the first catch basin would overflow under these conditions, the middle one would stand full of water and the last catch basin would drain properly.

◆

About State License Laws for Master Plumbers

Editor, DOMESTIC ENGINEERING:—We are attempting to secure plumbing inspection in several counties on all plumbing work; and we are therefore very much interested in knowing if there is any state in the Union which has a state license law for master plumbers. Our state issues a plumber's certificate which does not mean much, as no examination is required.

Any information you can give us along this line will be very much appreciated. R. E. E.

Among the states having plumbing codes are: Wisconsin, Massachusetts and Michigan, the latter having been adopted about six months ago. These states have good laws for state regulation of the carrying on of the plumbing business. The best we can do is to tell you how you can obtain copies of these three different sets of laws. A study of them will most likely give you more satisfactory information than we can give in this department.

The titles of the codes and where they can be obtained are as follows:

"Wisconsin State Plumbing Code." State Board of Health, Bureau of Plumbing and Domestic Sanitary Engineering, Madison, Wis.

"Michigan State Plumbing Code." Michigan Department of Health, Bureau of Engineering, Plumbing Division, Lansing, Mich.

"Massachusetts Laws Relating to Licensing of Plumbers." Clerk, State Examiners of Plumbers, State House, Boston, Mass.

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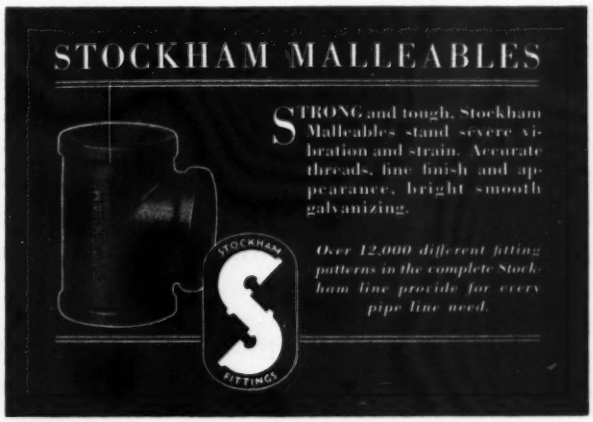
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Questions Answered and Discussed by Readers

How the Question Was Answered

The following question was asked in the issue of November 1, and the accompanying answer is by a reader:

Why is it wrong to connect a cellar drainer operated by water pressure directly into the drainage system? How should it be connected?

How Would You Answer This Question?

Consider that wrought iron or steel weighs 0.278 lb. per cubic inch. What will be the weight of 273 ft. and 8 in. of 2-in. wrought iron pipe? The inside diameter of this size of pipe is 2.07 in. and the outside diameter is 2.37 in.

Answers based upon your experience, and suitable, will be paid for and published in the December 27 issue.

1

THE automatic cellar drainer should never be connected directly to the drainage system. The objection is that there is seldom sufficient water used on the basement floor to maintain a perfect seal at all times against sewer gas and foul odors from the drainage system cesspool or sewer.

If the cellar drainer is operated by water pressure and is connected directly to the house drain, it is likely to provide a cross connection between the distributing system of water supply used for drinking purposes, so as to permit or make possible the back flow of sewage into the supply system.

The water pressure cellar drainer should discharge its contents into the house drain through an open elevated sink properly trapped and vented. It should be as close as possible to the main trap and the fresh air inlet, or it should have a separate vent.

Cambridge Springs, Pa. K. W.

◆

Death of Charles F. Heck

Charles F. Heck, of 6 Twelfth street, Providence, R. I., died at his home in that city on November 2, following an illness of more than a year. He had conducted a plumbing business in Providence for the past thirty years. He was fifty-nine years old and had lived in Providence all his life. He is survived by two brothers and three sisters.

◆

Death of Arthur Hateley

Arthur Hateley, senior partner in the firm of Hateley & Hateley, plumbing and heating contractors of Sacramento, Calif., died in that city on October 9, following a brief illness. He was the father of Thomas J. Hateley, the junior partner of the business.

Electric Heat in the Home

(Continued from Page 95)

readily be adapted to electric heating. One of the features is the utilization of all of the existing plant with the exception of the boiler.

In preparing to change a home over to electric heat, a preliminary survey is desirable to determine the characteristics of the existing heating system and to eliminate sources of excessive heat waste. Architects' plans are used, when available, or

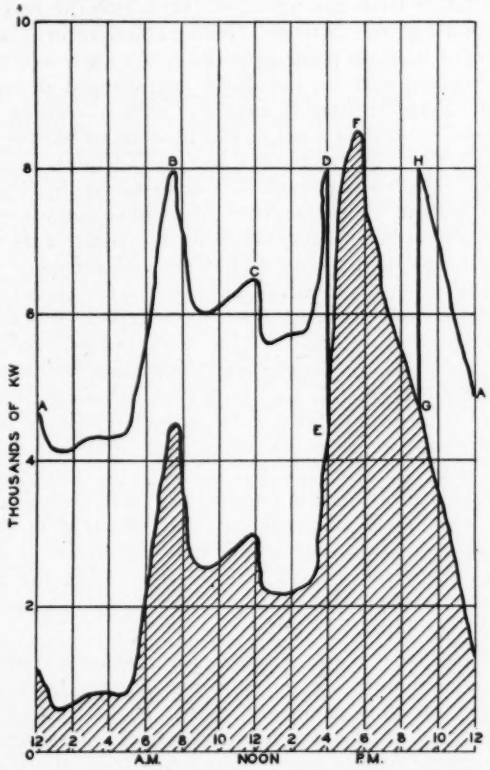

Fig. 3—A typical daily power load curve of electric power companies. The cross-hatched area represents the normal operating loads. Notice that the maximum morning load occurs between 6 a. m. and 8 a. m. while the peak evening load occurs at about 5:30 p. m. when everyone is going home from work and the street cars are most busy. The power companies would like to see the low points raised meaning that there would be a constant load on their electric generating equipment throughout the twenty-four hours. When the off-peak electric house heating load is added to the normal load, the curve is raised to that shown by the line ABCDEFGHA

sketches are made by the one surveying the plant to be altered. From these plans, and from a check made upon the piping it is possible to recommend such slight alterations or additions as may be desirable in those homes in which heating by the old method was either inadequate or obtained only by severe forcing of the fire. The comfort of the household may often be greatly improved by the insulation of it, above the top floor, which prevents a rapid loss of heat to the outside. Side walls in new and old homes may also, to advantage, receive this attention. A thorough

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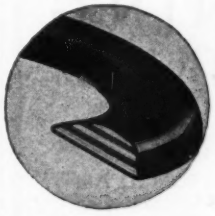

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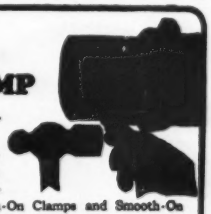

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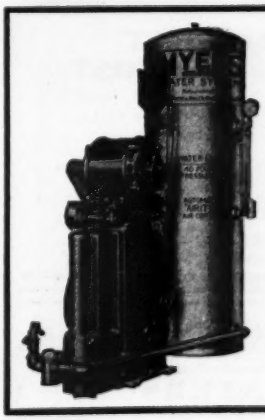

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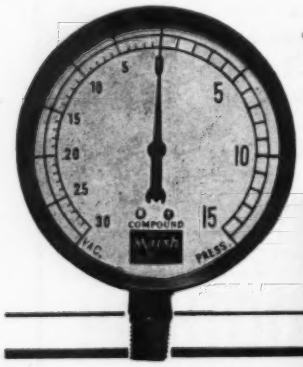

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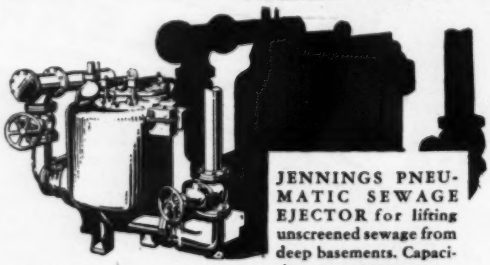

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survey of this nature leads to the accomplishment of a satisfactory installation.

The work of installing the electric heating tank is not complicated. A good location for the storage tank is selected. Setting and enclosing the tank are operations requiring average care. The space beneath the tank is waterproofed and metal tank chairs are set in position without foundations. Asbestos pads separate the tank from its chairs to reduce heat losses. The housing frame is next erected around the tank.

Similar to a hand-fired hot water boiler, the supply line is taken from the top of the tank and the return line enters at the bottom. Headers and returns are connected to these points. In the case of a converted blast heating system, the ducts are brought in to a plenum chamber that is supplied with a volume of air blown through a blast heater by a silent blower of the proper C.F.M. capacity to provide adequate house heating. The storage tank is connected to this blast heater instead of to the risers of a radiation system. The master steamfitter exercises his usual care in piping between the tank and risers and returns. As in steam piping, expansion and contraction must be considered, and threaded joints need to be well drawn up, thus avoiding leaks at the very outset. Gauge glass and pressure gauge, relief valve and air vents, etc., present no installation problems. When the tank and its connections have been tested by cold water pressure and found to be sound and tight, the tank frame may be completely covered with insulating board, and fill insulation dumped over and around the tank, completely insulating it. So effective is this form of insulation that where it is employed in the spring, one week after a tank is shut down for the season, it is impossible to hold one's hand on a bared spot on the tank.

The electrical work consists of mounting a control panel conveniently on the housing. Service lines are brought into this panel and power is distributed to the elements in the tank through a magnetic contactor mounted on the panel. The leads from the thermostat, in an upstairs room, terminate in this panel and control the distribution of the heat throughout the house. An electric clock mechanism on the panel automatically handles the tank charging on off-peak hours. The current is cut off when the tank is fully charged by a pressure switch that is also mounted on the panel.

The Operation of the System

Let us picture the functioning of the system as it affects the occupants of the home. The tank charging is automatic; the timing of the morning heat is automatic; the operation of the thermostat in maintaining the heat throughout the day and evening is automatic; and the reduction of the house temperature for the night is automatic. When the temperature control is once set at, say, 70 deg. F, this even temperature may be expected daily throughout the winter. The severity of the weather outdoors has only the indirect effect of causing the tank storage to be drawn upon more frequently, but never to the point of exhaustion before recharging. In mild seasons there may be days when the tank will not be drawn

upon at all, but stand ready for instant call when rapid temperature drops result from weather changes. Altering the setting of the themostat is not only unnecessary but is undesirable, as there is nothing to be gained by such changes once it is determined what even temperature is satisfactory to the household. The "firing" duties are reduced to an occasional inspection of the tank water level and a check on the time clock setting, and even this latter is oftentimes handled by the power company, as it is to their interest as well as the customer's that the power demand be kept off-peak. It has been found that there is very little servicing to be done.

No Changes in System Needed

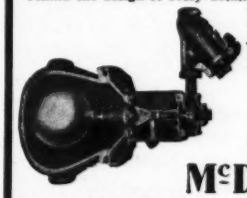
It is unnecessary to make any changes in the heat distribution system to convert the plant to a system heated electrically. Where there has been inadequate or poorly distributed heating in a home to be converted to electric heat, this distribution should be corrected first. This would be equally necessary were a new fuel fired boiler to be installed. The change is but a substitution of the electrically heated tank for the original heater. This substitution is not to be considered a cure-all for the faults of the heat distribution system any more than would be the case if gas or oil were used. The method of creating the heat in the cellar differs, but the proper proportioning of this heat to adequately supply each room of the house is not a function of the boiler but of the system transmitting this heat to the house. Thus, a well laid out distribution system of radiators that will function properly with the hand fired unit, will respond beautifully to the electric storage tank system. A poor or unbalanced distribution system makes very imperfect use of heat generated in the cellar, regardless of the type of boiler supplying it. Installing a different boiler cannot correct this. The solution is to provide an adequate and uniform distribution of the heat by such changes as would be necessary to do justice to any heating unit. Heating contractors meet these conditions and solve these problems of faulty distribution almost daily. Ordinarily they form the bulk of remodeling work and the success of the changed installation depends upon how well each part of the entire system is made to function. It is not infrequent that a correctly installed system becomes inoperative or inefficient as a result of such causes as the settling of the building.

Electrically Heated Domestic Water Supply

Electrically heated water, for domestic use, is also rapidly becoming popular. A storage system utilizing power on off-peak hours is employed in the individual electric domestic hot water heaters. These are provided complete as units in various capacities. Water is stored at high temperature and is used for the various household purposes of washing, laundry work, etc., at a temperature of about 130 deg. Fahr. This is accomplished by mixing a high temperature water automatically with cold water so that the normal hot water supply is available at the faucet. This small brother of the electric heating system in many cases fills a need for hot water supply in locations to which gas mains have not as yet been laid.

Why Invite Trouble? . . . .

To be worthy of its name a boiler feeder must be dependable at all times and under all conditions. That is why *certainty of operation* is the guiding principle behind the design of every detail in McDonnell & Miller Boiler Feeders. The *valves that stay new* in the M. & M. No. 28 Self-Cleaning Duplex Feeder, and the *isolated feed valve* in the McDonnell No. 30 Safety Feeder, are features that forestall every source of trouble. Ask for detailed description.



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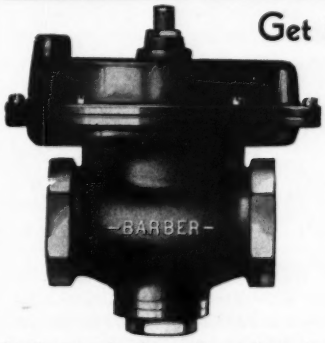

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Woman's Page

Women's auxiliaries to the master plumbers' associations in all parts of the country have by now resumed their regular meetings. Many have made plans for all their meetings during the current season, and many have planned a schedule of social affairs. News of these plans and activities, when published on this page, reaches members and officers of the various auxiliaries all over the country. Secretaries can help in the work of spreading information about all that their organizations are doing by writing regularly, and sending news items for publication on this page.

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Cleveland Women Hold Meeting

The Ladies' Auxiliary to the Associated Plumbing Contractors of Cleveland, Ohio, held its regular meeting on November 5, with a good attendance. Mrs. Greenwald was hostess. Plans were completed for a card party to be held at the home of Mrs. Frank Smith, 3170 Corydon Road, Cleveland Heights. Mrs. Smith very kindly offered her home, and extended a cordial invitation to the ladies and their husbands. On October 25 a luncheon bridge was held at Regnatz's. The affair was a great success, all but two members being present. The delicious food was enjoyed, and pleasant reminiscences were exchanged concerning luncheons given on other occasions by the auxiliary. The committee in charge of the luncheon received the congratulations of all present. Honors at cards went to Mrs. F. Berkowitz, Mrs. M. Patmos and Mrs. E. Ellen.

Columbus Auxiliary Gives "Hard Times" Party

The Columbus, Ohio, Women's Auxiliary gave a most enjoyable "hard times" party on November 11, at 6:30. The party was held at the home of Mrs. J. F. Oelgoetz and forty members attended. Some very interesting old-style costumes were worn. Mrs. D. F. Duffy was the winner of a market-basket full of groceries. Mrs. J. H. Duffy was also a prize-winner. Five hundred was the diversion of the evening. Much credit for the success of the affair was given to the hostess and the committee consisting of Mrs. J. R. Jacobs and Mrs. B. McDonald. Plans were made for a Christmas party to be held on December 20.

Florida Women Meet at Winter Haven

In connection with a meeting of the master plumbers, the ladies of the various Florida auxiliaries met at the home of Mrs. J. A. Mann, of Winter Haven, on October 29. Auxiliary matters were discussed. Among the visiting ladies were Mrs. A. R. Leach, Mrs. Lee Phillips, Mrs. Chas. Reicken and Mrs. F. R. Fanning.

Chicago Steamfitters' Auxiliary Plans "Splash Party"

The Women's Auxiliary to the Chicago Master Steamfitters' Association held its regular monthly meeting on Monday, November 17, at the Palmer House. There was a good attendance, and after luncheon had been served, members enjoyed an afternoon at cards. Something new has been arranged for an extra social affair, namely, a "splash party," to be held in the beautiful pool of the Medinah Athletic Club, on December 1. After swimming and "stunts" in the pool have been enjoyed, luncheon will be served. The affair will be a "Dutch treat." The securing of the pool has been made possible through the efforts of Mrs. Malcolm Buckley, past president of the auxiliary, and a large attendance is expected. Another social affair, planned for February, is to be a theater party.

Indianapolis Auxiliary Plans Social Affairs

The regular monthly meeting of the Auxiliary to the Merchant Plumbers' Association of Indianapolis, Ind., was held at the home of Mrs. Frank E. Irish, 1214 Parker

A Message to the Auxiliaries

By Mrs. Edward J. Durr, president of the New York State Women's Auxiliary.

To the Editor:—

I wish to ask your support in getting the ladies throughout the state to become interested in joining or forming auxiliaries where no auxiliaries exist.

It is my desire to increase the number of local auxiliaries, and to have the ladies become interested in the welfare and progress of the plumbing and heating industry, as well as their husbands' interests. I feel that the plumbing and heating craft is most essential—a necessity for the health and protection of human life on this earth. Without the services of master plumbers and heating contractors, cities and towns could not exist.

The outings and social affairs of the women's auxiliaries are a source of enjoyment to all, and much good is derived from our contact with others in our industry. It is my hope that the membership of the existing auxiliaries will be increased, and that new auxiliaries will be formed during the coming year.

avenue, Friday, November 14. The meeting was called to order at 2:30 p. m. by the president, Mrs. G. T. Watson. Fourteen members responded to roll call. There was some discussion of the ways by which money might be made to help defray the expenses of the state convention to be held in Indianapolis, in March, 1931, but nothing was decided definitely at this time.

The evening party given monthly for members and their families is to be held at the home of Mrs. Charles F. Trosky, secretary of the organization, at 633 South New Jersey street, on Saturday, November 29. Mrs. R. Bardy and Mrs. G. Sellmeyer were appointed a committee to make arrangements for the party. It was decided to hold the next regular meeting on Friday, December 12, at the home of Mrs. L. E. Isley, 5444 Broadway. It was also decided that instead of having the exchange of Christmas gifts between the members, each one should take a can of fruit or vegetables or some staple article of food and the contributions be given to some needy families. After the business meeting had been adjourned, cards and bunco were played, and a delightful luncheon was served.

Tacoma Auxiliary Resumes Meetings

The Ladies' Auxiliary to the Merchant Plumbers' Association of Tacoma, Wash., held its first business meeting of the season in October. Mrs. Ben Olson, vice-president, presided at the meeting. It was arranged that the ladies would entertain the husbands with a social and card-party on October 24. The party was most successful. Mrs. Ben Olson, Mrs. G. A. Weber, Mrs. W. H. Layton and Mrs. J. B. Fitts acted as hostesses for the evening. Mr. and Mrs. Layton and Mrs. Charles Richardson won honors. Another meeting was held at Mrs. Olson's home on Friday, November 14.

North Hudson Women Attend Theater Party

The membership of the Women's Auxiliary of the Master Plumbers' Association of North Hudson, N. J., attended a theatre party on October 30 in New York City. Nearly fifty ladies had dinner at the Palais D'Or Restaurant before attending "Fine and Dandy." Mrs. Vincent Farrelly was in charge of the preparations and had the assistance of Mrs. William Borg, Mrs. Edward Muth, Mrs. E. Seitz, Mrs. Charles Steller and Mrs. A. C. Krieger.

Party Given by Schenectady Auxiliary

The October meeting of the Schenectady Ladies' Auxiliary was held on the 9th of that month. A lovely luncheon was served after business, and games were played. At this meeting it was decided to give up the meeting rooms and meet at the homes of the members. Mrs. T. J. Sims will entertain the first meeting under this plan.

Arrangements were completed for the Halloween Party which was held on October 30th at the home of Mrs. W. Atkins. Most of the members with their husbands were present. Cards were played and a few Halloween stunts performed. The Halloween menu consisted of cider, doughnuts and pumpkin pie. The evening was so enjoyable it was decided that more of these social gatherings would be held this winter.

Costume Party Given by Denver Auxiliary

The Women's Auxiliary to the Denver, Colo., Master Plumbers' Association held a Halloween costume party at the home of Mr. and Mrs. E. B. Clayton on Saturday, November 1. A demonstration dinner was served at six o'clock by Marvin Johnson and Roy Stocking, representing an aluminum company. The fine dinner was enjoyed by Messrs. and Mesdames Brickey, Samson, Hanlin, Bock, Cooper, Stocking, Kiser, Demmer, Clayton, Welle, Bordeau

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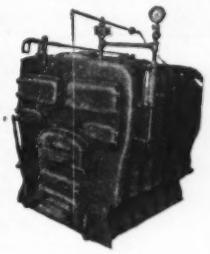

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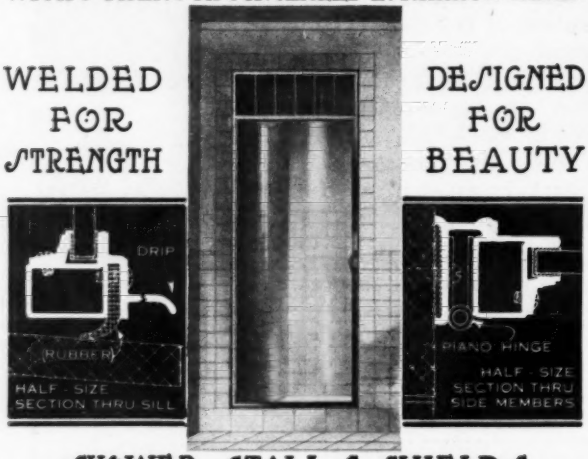

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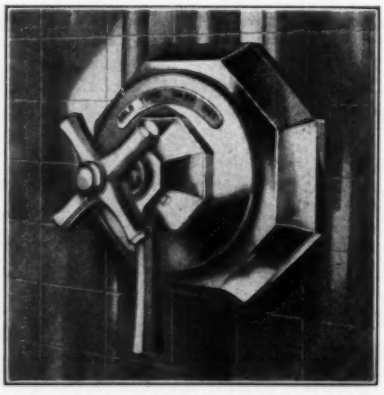

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Top picture: Mrs. G. E. Smith and Mrs. J. J. Lafferty, both of Denver. Bottom picture: Mrs. F. L. Welle and Mrs. Vincent Kandorf, both of Denver. Photos taken at the recent convention of the Colorado Society of Sanitary and Heating Engineers

and Newman, Mrs. Julia Hensler, Miss Frances Stocking, Kenneth Demmer, Ernest Clayton and Mr. Moffit. Gypsy costumes, Dutch costumes and dresses of 1900 were among the costumes worn by the guests. Cards were played after dinner, and later in the evening candy, popcorn and cider were served. Honors went to Mrs. Hensler, Mrs. Hanlin, Clyde Newman, Mr. Cooper and Mrs. Newman.

Newton Auxiliary Resumes Meetings

The Women's Auxiliary to the Newton, Mass., Women's Auxiliary has resumed its meetings, the first fall meeting having been held recently at the home of Mrs. Neils Jepsen, 297 Cherry street, West Newton, Mass. After a lengthy business meeting, bridge was played, honors going to Mrs. Davis, Mrs. McGourty, and Mrs. Burke. Refreshments were served later to the women and their husbands, who joined them after the meeting.

Mansfield Auxiliary Plans to Add to Its Treasury

The Women's Auxiliary to the Master Plumbers' Association of Mansfield, Ohio, met on October 30 at the home of Mrs. Marlow. Plans for charitable work were discussed. It was also decided that each member should lay aside one penny each day, and ten cents on each national holiday, for one year, beginning on January 1, 1931, in order to help defray state and national dues, scholarship and travel funds. The president, Mrs. Charles Arting, is to supply each lady with a fancy little penny container. Members were heartily in favor of this plan, and hope that all bags will be filled next year. After the business meeting, the ladies knotted a comfort to be given to some needy family. The hostess then served a delicious luncheon, which was much enjoyed by all. A delightful social event which members of the Mansfield Women's Auxiliary attended was a dinner served at six o'clock at Stamen's Inn, Mifflin, on Tuesday, November 18. On this occasion the ladies were guests of the master plumbers' association.

Milwaukee Auxiliary Gives Pillow Slip Party

Over 1300 people put in an appearance at the Pillow Slip Card party held under the auspices of the Ladies' Auxiliary of the Milwaukee Master Plumbers' Association at the Schroeder Hotel, Friday, November 7. So great

was the crowd, that many persons were turned away for lack of accommodation.

The entire fifth floor of the huge Schroeder Hotel was given over to the event. A pair of pillow-slips was given at each table, about 175 of which were made and donated by members of the local ladies' group.

Mrs. Walter Dusold, chairman of the entertainment committee, and Mrs. William Schoenrock, her assistant, assumed considerable of the responsibility in connection with the card party, and they were ably assisted by all of the ladies of the group who worked together to make the party the huge success it turned out to be.

A vote of thanks has been rendered to the ladies by the Milwaukee Master Plumbers Association, who have complimented them on their enterprise in holding the event.

Oranges Auxiliary Gives Card Party

The Women's Auxiliary to the Master Plumbers' Association of the Oranges, N. J., recently held a card party to which the master plumbers and tradesmen were invited. There were about twelve tables in play. After the card games, refreshments were served by the hostess. The affair was a decided success.

Buffalo Auxiliary Elects Officers

On November 4, the Buffalo, N. Y., Women's Auxiliary held its annual meeting in the Jackson building. The following officers were elected for the ensuing year: Mrs. Julius Irr, president; Mrs. George Frank, vice-president; Mrs. William Ludlow, secretary; and Mrs. Henry Ritter, treasurer. Mrs. Irr appointed seven directors consisting of the present staff of officers and Mrs. Jacob Schunk, Mrs. Albert Kranichfeld and Mrs. William Dechert. This meeting was preceded by a Dutch treat luncheon at Gundy's.

Halloween Party Given by South Shore Auxiliary

The South Shore Woman's Auxiliary held its regular October meeting at the Hotel Racine, Racine, Wisconsin. The business session was presided over by Mrs. Henry J. Smith, president. Cards were enjoyed later in the afternoon, with prizes being awarded to Mrs. John Feiner and Mrs. Arthur E. Johnson. At 6:30 o'clock a four-course dinner was served to the ladies, who entertained their husbands. Covers were laid for thirty-six. The "U"-shaped table was beautifully decorated in Halloween style. Mr. and Mrs. Axel Sanderhoff of Racine told of their travels abroad this summer. Later, cards were played, honors going to Mrs. August Ernst and Mr. J. A. Murphy. The committee in charge consisted of Mrs. L. Pugh, chairman, Mrs. J. A. Murphy and Mrs. H. J. Smith.

Top row: Mrs. Henry Swade, Chicago; group of Wisconsin ladies. Bottom row: Mrs. H. J. Smith, Racine, Wis.; Mrs. Joseph Brah, Mrs. Walter Tesch, and Mrs. Charles Heffling, Jr., all of Milwaukee, Wis.; Mrs. L. O. Klopfer, president, Women's auxiliary, Minneapolis, Minn. Photos taken at Boston convention of the N. A. M. P.

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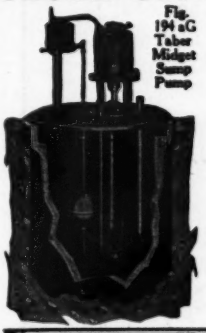

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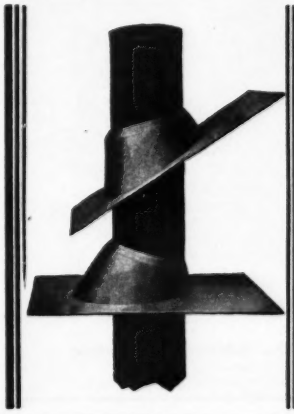

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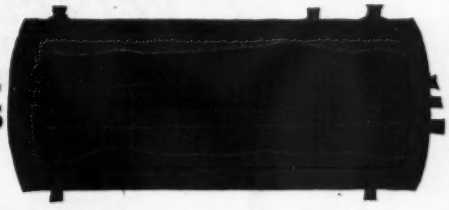

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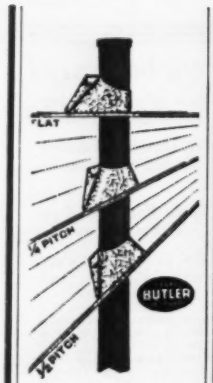

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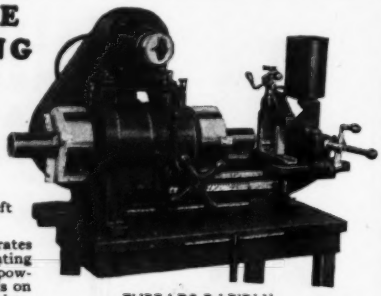

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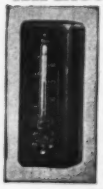

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Plumbers can make new profits selling to Summer homes, cottages, resort hotels, factories, etc.—anywhere that hot water is wanted and gas is not available. Full automatic and side arm models.

Get Literature

D. D. WESSELS & SONS CO.
DETROIT, MICHIGAN

New Trade Literature

Circular of American Radiator Co.

American Radiator Co., New York City, is sending out a circular describing a new round boiler of its manufacture. The boiler is illustrated, both jacketed and unjacketed, and a cross-section view is also shown.

Bulletin of American Rolling Mill Co.

"Ventilating the General Science Building of Antioch College," is the title of a bulletin just issued by The American Rolling Mill Co., Middletown, Ohio. The use of the company's iron in the duct work of the laboratory is pointed out.

Catalog of Milwaukee Valve Co.

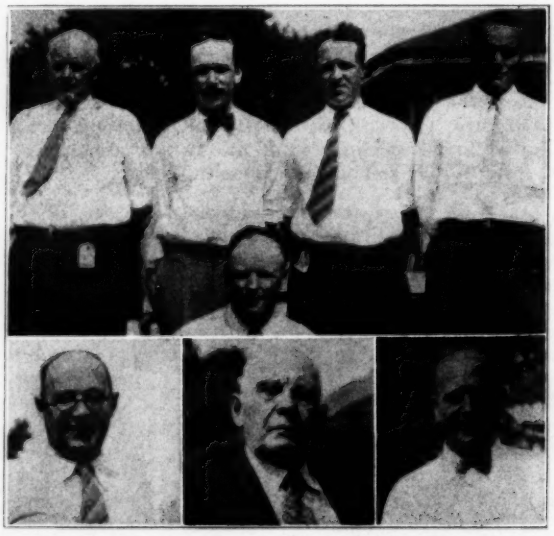
Milwaukee Valve Co., of Milwaukee, Wis., has just issued a catalog describing its brass valves and heating specialties. Packed radiator valves, brass globe and angle valves, gate and check valves, needle point valves, brass unions, control valves for lawn sprinkler systems, etc., are illustrated and described in the first part of the catalog. The second part includes automatic air valves and vents, thermostatic traps, packless radiator valves, air eliminators and vents, drip and blast traps, etc. Diagrams of installations are also given.

Booklet for Herman Nelson Corp.

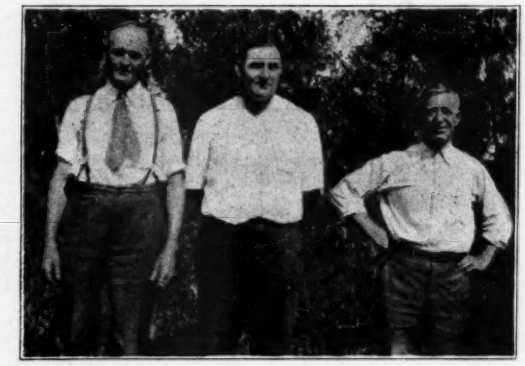
Herman Nelson Corp., Moline, Ill., has just issued a booklet describing its system of ventilation. A number of pages are devoted to a history of ventilation, including the various theories on ventilation, present ventilating laws and ordinances, etc. The company's system of ventilation as applied to class rooms and similar spaces is next described. The ventilator, with its wedge core radiator, and fan and motor unit, is illustrated. A series of five diagrams shows how the ventilator automatically adjusts the heat delivery, recirculating air or admitting outdoor air, as weather conditions require.

Bulletin of Chicago Pump Co.

Bulletin 126 has just been issued by Chicago Pump Co., of Chicago. Non-clogging pumps (open shaft) for sewage handling and drainage in municipal sewage disposal plants, lift stations, etc., are described in the bul-



Top picture: E. C. Hoelscher, J. Nilson, M. A. Nelson and E. C. Hoelscher, Jr., all of Hoelscher Bros., Chicago; J. S. Mackenzie. Bottom row: Robert Nelson, R. B. Finn and Perry Larsen, president of the North and West Side Plumbers' Pleasure Club



Left to right: D. H. Osborn, president; Robert Morrill, secretary; Alfred Jerg, treasurer. Photo taken at annual outing of Southern Wisconsin Master Plumbers club, held at Lake Koshkonong

letin. Numerous diagrams and cross section views are given, as well as installation suggestions. A gravity feed lubricator, an automatic electric lubricator and oil saver, control apparatus, etc., are also described. Tables for open-shaft type non-clog pumps, and architects' specifications are included.

Bulletin of Borden Co.

The Borden Co., Warren, Ohio, has just issued a bulletin describing nine of its new pipe tools. Among these is a new square-end pipe cutter (for 2½-inch to 4-inch pipe) to be used interchangeably with the company's new die stock. This die-stock has the gears fully encased and packed in graphite grease, and gear cases are made of nickel semi-steel. The bulletin gives a technical description and illustrations of this combination, designed for use by plumbing and heating contractors, oil companies, sprinkler companies, water works or industrial plants. Other new tools, such as a new type of die head, bolt-die head, wheel cutter, ratchet die stock, etc., are also described.

Circular of Taber Pump Co.

Taber Pump Co., Buffalo, N. Y., is distributing a circular describing its centrifugal pumps. Automatic vertical motor driven sump pumps are illustrated. A duplex sump pump unit, a portable type sinking pump, an automatic flood water pump, etc., are also described and illustrated.

Circular of H. M. Sheer Co.

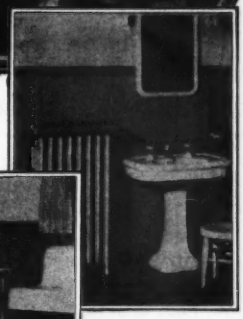
H. M. Sheer Co., Quincy, Ill., is sending out a circular describing a unit heat regulator for space heaters. This regulator is a bellows actuated throttling type of direct control unit designed for installation on all types of gas-fired individual room and space heaters. Illustrations and diagram are given. An envelope stuffer with the caption "Health and Economy with Temperature Control" is also being distributed by the company. The convenience of temperature control for coal, coke or gas burning heating plants is pointed out.

Catalog Material of Crane Co.

Crane Co., Chicago, has issued new catalog material on the subject of vitreous china closets, drainage fittings, siphon jet wall closets, reverse trap closets, prison closets, bidets, direct flushing valves, vitreous china and enameled tanks, hard rubber closet seats, white finish closet seats, closet chairs, etc. In addition to descriptions, there are numerous illustrations in this catalog material.

Circular of Stanley G. Flagg & Co., Inc.

Stanley G. Flagg & Co., Inc., of Philadelphia, is sending out a circular describing its brass "service" gate valve, designed for working pressures of 100 lb. steam and 140 lb. water. A view of the valve, pointing out its various parts, is given in the circular.



We'll Help You Sell Them!

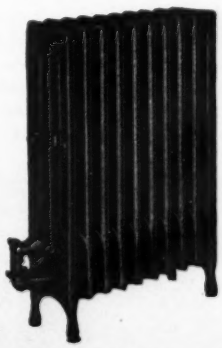
Business conditions are changing... *have changed.* Drug stores are fast becoming restaurants. Cigar stores are being converted into soda fountains. Competition is so keen... today... that "side-lines" must be added if one wishes to remain in business. Armstrong Radiator Shields and Enclosures offer you an extra source of profit.

THE THOMAS & ARMSTRONG CO.
Radiator Shield Division, Dept. D-17
London, Ohio

Our tried-and-tested plan offers you a practical method of obtaining this profit. Write us today.

Armstrong Radiator Shields & Enclosures

CUT · HEATING · COSTS
PREVENT · INCONVENIENCE
this modern way



If you're figuring out ways to get real business, don't overlook the Automatic Gas Steam Radiator. It's a TWO for ONE buy. Does double the work for once the price.

Part of the regular steam, hot water or vapor system, yet it is an independent heater when desired.

Your customers can save the price of these remarkable radiators on fuel saved and yet have the convenience.

AUTOMATIC Gas-Steam RADIATORS

Write for catalog.

Write us for complete details. It is a real money making plan for you.

AUTOMATIC GAS-STEAM RADIATOR CO.
PITTSBURGH, PA.

Business Changes and Ventures

New Ventures

Syracuse, N. Y.—The Mel Lynch Corp. has been chartered, with a nominal capital of 100 shares of no par common stock, to establish and operate a heating contracting and engineering business. The new concern is represented by C. A. Goldstein, local attorney.

Bayonne, N. J.—The Higgins Heating Corporation has been incorporated, with a capital of $25,000, by Ira M. Higgins and associates, to establish and operate a heating contracting and engineering business. Benny and Cruden, local attorneys, represent the new concern.

South Gate, Calif.—The Bob & Roy Plumbing Shop has been opened at 9605 California avenue, by Robert L. Dark and Roy E. Dillon.

Los Angeles, Calif.—The Consolidated Plumbing Co., 4560 West Pico street, has been formed by A. and W. J. Sketchley, of 1241 Mullen avenue.

Los Angeles, Calif.—The Day & Night Plumbing Co. has been established at 2214 Santa Monica boulevard, by D. J. Moran and Edward Warnes.

Los Angeles, Calif.—The Sebrite Plumbing Shop has engaged in the plumbing and heating contracting business at 4135 West Pico boulevard, under the management of Richard J. Finn.

Los Angeles, Calif.—Herbert E. Sawyer and Malcolm J. McLaurin have engaged in the plumbing and heating business at 4179 West Second street, under the name of Sawyer & McLaurin.

Chilton, Wis.—The Rural Plumbing, Heating & Gas Co., Inc., has opened for business at 148 Main street in the building owned by Mrs. John Ortlieb. P. L. Callahan is president and manager of the company.

Chicago, Ill.—Frankel Plumbing & Heating Co., 1551 South Homan avenue, has been incorporated by Nathan Frankel, Jacob Weingroff and L. Katzman.

Wymore, Nebr.—Ivan and Clayton Lasher have opened a plumbing shop in a building on lower Main street.

Cleveland, Ohio.—The Gordon Plumbing & Heating Co. has been incorporated with a capital of $1,000, by Alfred Soltz, Bernard H. Schulist, and S. M. Marks.

Chicago, Ill.—Barber Plumbing & Heating Co., 53 West Jackson boulevard, has been incorporated with a capital of $10,000, by Norman Broheim, N. M. Barber and Olaf A. Olson.

New York City—The Heating Engineering and Appliance Company has been organized and incorporated, with a capital of $20,000. The new firm is represented by A. C. Dick, 51 Madison avenue.

Troy, N. Y.—The Wheeler-Larkin Corporation has been organized and incorporated, with a capital of $75,000, to establish and operate a plumbing and heating contracting and engineering business. The new concern is represented by the law firm of McAmee and Creble, Albany, N. Y.

Hackensack, N. J.—The Anderson Plumbing and Heating Company has been organized and incorporated, with a capital of $100,000, to establish and operate a plumbing and heating engineering and contracting business. The new concern is represented by F. V. Jerlinski, local attorney.

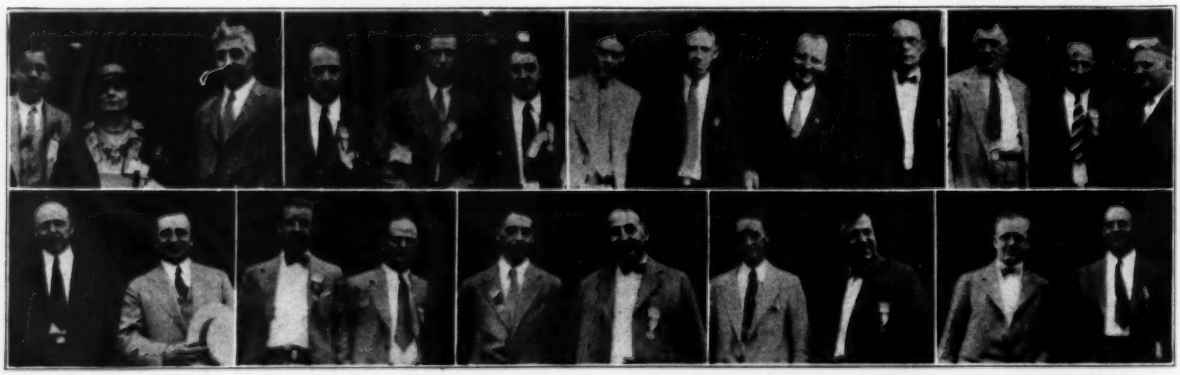
Tuckahoe, N. Y.—The firm of Gaddis Brothers, Inc., has been chartered, with a capital of $20,000, to establish and operate a plumbing and heating contracting and engineering business. J. J. Ferone, local attorney, represents the new concern.

Queens Village, N. Y.—The firm of Carroll Brothers, Inc., has been organized and incorporated, with a capital of $5,000, to establish and operate a plumbing and heating engineering and contracting business. The new concern is represented by I. Darrin, Long Island City, N. Y.

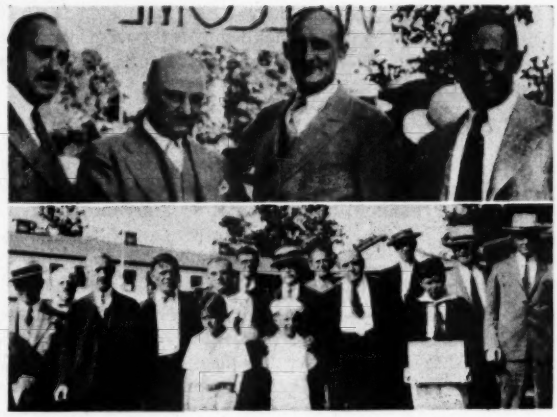
Oakland, Calif.—The Diamond Plumbing Co. has engaged in the plumbing and heating business at 2227 Hopkins street.

Placerville, Calif.—Glasgow Brothers have leased the quarters in the Fairchild building, and will engage in the plumbing and heating business.

New York City—The Metro Plumbing and Heating Company has been organized and incorporated, with a nominal capital of $1,000, to establish and operate a plumbing and heating contracting and engineering busi-



Top row: John E. MacGamwell, Mrs. and Mr. William MacGamwell, of Buffalo, N. Y.; H. Kroepke, A. Platt and William Kroepke, all of New York City; H. Overstrom, Walter Sullivan, Arthur J. Kelberg and O. A. Peterson, plumbing inspector, all of New Britain, Conn.; J. McNamara, J. A. Burns and F. R. Maxwell, all of New York City. Bottom row: George E. Purdue and J. F. Sheppard of C. S. Mersick & Co., both of New Haven, Conn.; H. S. Thrasher and Harold Asquith, both of Philadelphia, Pa.; F. J. Mongrain and J. F. Mongrain, both of Bridgeport, Conn.; E. D. McGowan, Plumbers Supply Co., and M. E. Greenleaf, both of New Bedford, Mass.; Harry G. Starr, Wm. H. Gallison Co., Boston; F. A. Monroe, president, Monroe Co., Cambridge, Mass. Photos taken at Boston convention of the N. A. M. P.



Top row: E. F. Disbrow, Lewis White, Brunswick-Balke-Collender Co., Chicago; A. L. Altman, Jacob Jarcho, Jarcho Bros., New York City. Bottom row: Group of Greater New York master plumbers at the outing at Welfare Camp

ness in the Bronx. The new firm is represented by P. Ginsburg, 99 Nassau Street.

Norfolk, Va.—Enterprise Co., Inc., has been incorporated with a capital of $10,000, to conduct a plumbing and heating business. J. F. Gill is president of the company. Smith & Smith of Norfolk are attorneys for the new concern.

Brooklyn, N. Y.—Harry Jacobs and associates have incorporated the firm of Harry Jacobs, Inc., with a capital of $5,000. It is planned to establish and operate a plumbing engineering and contracting business. T. Perlman, 26 Court Street, represents the new concern.

Jamaica, N. Y.—The Goldberg and Baron Plumbing and Heating Company has been organized and incorporated, with a capital of $20,000, to establish and operate a plumbing and heating contracting and engineering business. The new concern is represented by J. N. Tishkoff, 291 Broadway, New York City.

New York City—Alsigel, Inc., has been organized to establish and operate a plumbing contracting and engineering business. The new firm is represented by J. R. Davies, 115 Broadway.

Birmingham, Ala.—The Roegner Plumbing & Heating Co., Inc., has been incorporated by Dan Roegner, Vernon Roegner and D. T. Hardin. The paid-up capital stock is $2,000.

Indianola, Iowa.—Clint L. Younker has opened a plumbing shop here.

Los Angeles, Calif.—The Goulson Plumbing Co. has been formed at 3819 Central avenue, to conduct a plumbing and heating business, by John Goulson and William D. Hanton.

Bowerston, Ohio.—Bowerston Plumbing & Heating Co. has opened a plumbing and heating establishment next to Bowerston Motor Car Co.'s garage.

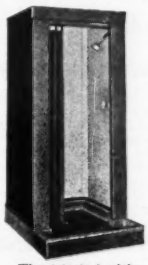
Lake Odessa, Mich.—L. A. Levinge has opened a plumbing and heating shop in the Poff building.

Sioux City, Iowa—The Budden Co., Inc., has been incorporated with a capital of $10,000, by Zeno F. Budden and E. H. Barber.

Picher, Okla.—Picher Plumbing Co. has engaged in the plumbing business at 115 South Main street.

Dickinson, No. Dak.—The Independent Plumbing and Heating Shop has been opened in the Merchants National Bank building, First Avenue West, by A. Gilmore and

The Plumber's JOB - the Plumber's PROFIT



The Admiral with extended receptor and curtain

Fiat Shower Bath Compartments and Shower Doors

Whether building or remodeling . . . FIAT Shower Bath Compartments and Shower Doors mean double profits for you. Profit on the sale and Profit on the installation.

FIAT Shower Compartments are made in many sizes and designs . . . are of knock-down construction and can be installed on rough or finished floors. Permanent . . . absolutely leak-proof. Easy to install.

Write for full particulars.

FIAT METAL MFG. COMPANY
1211 Roscoe St. Dept. 6113 Chicago, Ill.

Air-Tight Steel Tank Co.
PITTSBURGH, PA.

TANKS FOR: High pressure gas and air storage—Pneumatic water systems—Gasoline and oil storage—Oil burning equipment—Open top—Welded. ATSCO Genuine Copper Brazed tanks for high pressure—the tightest, safest, strongest tank it is possible to construct by any known process. A.S.M.E. code tanks.

Check DART UNIONS for Appearance

A union that puts up as neat an appearance on the line as the Dart and that never does anything but look good, is doing its job right.

Check Darts against the others you've been used to. They'll prove out.

LOOK FOR OUR CATALOG IN PLUMBING & HEATING CATALOG

E. M. DART MFG. CO., Providence, R. I.
The Fairbanks Company, Sales Agents • • Canadian Factory, Dart Union Co., Ltd., Toronto, Canada

LET THE WAY ARMSTRONG

Adjustable 3-Way Die Stock do all your work.

Holds, for instant use, three sets of No. 2 dies. Any combination for Iron, Steel, Brass or Copper; Pipe; Bolt; Rod; or Tubing.

Stop changing dies on the Job.

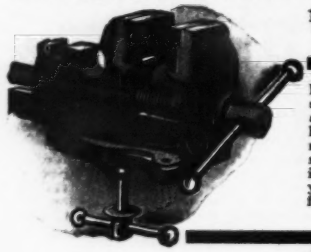
The ARMSTRONG MFG. CO.
Founded 1869
BRIDGEPORT, CONN.

One Stock that does the Work of three

SEND FOR SPECIAL FOLDER "B"

VANDERMAN
COMBINATION PIPE VISE

⅛ to 10 in. range



Now is the time of year you should check over your shop and job equipment. If you have not a Vanderman Combination Pipe Vise you are missing the many conveniences it affords. It will save you money and trouble. Write for details today.

THE VANDERMAN MFG. CO.
Willimantic, Conn.

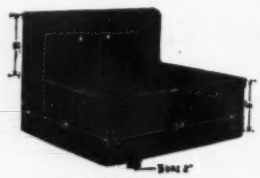


Figure 237
Acid Proof One Piece Laboratory Sink with Back

UNUSUAL strength, toughness and durability, ease of installation and inexpensiveness combined with its acid and corrosion proof qualities make Knight-ware ideal for WASTE, DRAIN and VENTILATING LINES, LABORATORY SINKS, SUMPS and similar acid proof equipment.

MAURICE A. KNIGHT
AKRON OHIO

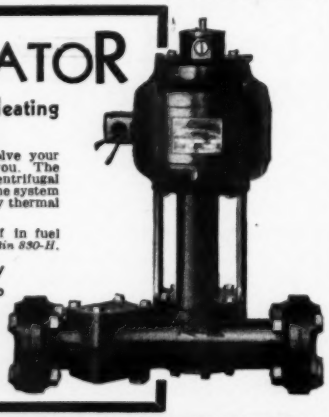
KNIGHTWARE
"IT IS THE BODY ITSELF"

HYDROLATOR

Solves Hot Water Heating Problems!

Let the Janette HydrolatoR solve your hot water heating problems for you. The HydrolatoR by means of a centrifugal pump drives the water through the system several times faster than ordinary thermal circulation.

The HydrolatoR pays for itself in fuel savings. *Write for Bulletin 830-H.*



JANETTE MFG. COMPANY
558-60 W. Monroe St., Chicago
New York
Singer Bldg., 149 Broadway
Philadelphia
Real Estate Trust Bldg.
Seattle, Wash.
Harrison Sales Co.
314 Ninth Ave. N.

"AMERICAN SEAL"
PIPE JOINT CEMENT

The use of "American Seal" Pipe Joint Cement will absolutely eliminate troublesome and costly, leaky installations. It will not dry out and what is more it is unaffected by heat or cold. Be on the safe side all the time—use "American Seal" on every job.

William Connors Paint Mfg. Co.
Troy N. Y.

Louis Petricka. Mr. Gilmore was connected with the Molloy Plumbing Co., of Dickinson, for twenty years, and lately was with this company's successor, the Dickinson Plumbing & Heating Co.

Business Changes

Detroit, Mich.—The Harroun-Hoffman Co., engaged in the plumbing and heating business at 5148 Fourteenth street, has changed its name to E. C. Harroun, Inc.

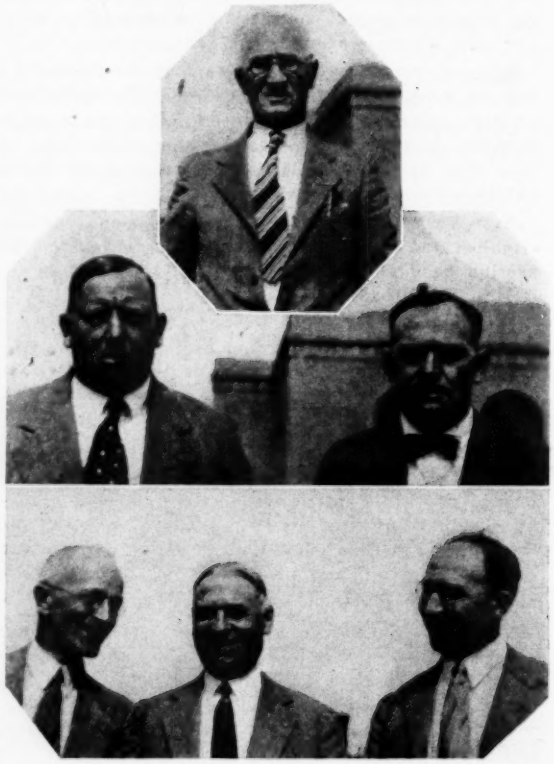
Minneapolis, Minn.—H. Kelly & Co., plumbing and heating contractors, have moved their offices from 925 Plymouth Building, to 948 Northwestern Bank Building.

Columbus, Ohio.—The firm of Walters & Hoffman, heating engineers, at 978 North High street, has been reorganized. A new company has been incorporated, with a capital of $5,000, to take over the business of the old firm. The new company will be known as the William F. Walters Heating Co., and will be located at 288 North High street.

Stanley, No. Dak.—Frank C. Hensen has sold his plumbing and tinning business to Gabe Thompson.

Muskegon, Mich.—George H. Shoup, for many years in business at 791 North Jefferson street, has sold his establishment to Elmer L. Wickland and George Cayan. The firm will be known as the Wickland and Cayan Plumbing and Heating Co.

Sterling, Ill.—Carl Loos & Son have moved their plumbing business from the basement of the Sterling National Bank building to 119 West Third street. This firm has been in business for thirty-nine years in Sterling.



Top picture: George J. Diggins, first vice president, Delaware County association. Middle picture: Hugh McElwee and Harry Mitterauer. Bottom row: Robert H. Pfug-Felder, secretary of Philadelphia association; George Moeller, treasurer of Philadelphia association; Harry L. Stilwell. Photos taken at the visit of the Philadelphia master plumbers to the sewage treatment plant

Pipe —— Lines

Connected by LY T

SOME REMARKS OF CONSOLATION ADDRESSED TO SALESMEN

Many a hard-boiled buyer got that way from being in hot water with the boss all the time.

And many a buyer got his frozen face from being chilled by his own fears.

He may look fierce, but it's very likely that this morning he parked the rubbers his wife made him wear at the corner cigar store.

"Put yourself in his shoes" has always been thought of as good advice. But frequently a man is wearing shoes that pinch him at the same time that he is wearing a hat several sizes too large for him. In that case, talk to his hat size and don't mention his shoes.

From an OLD SALES MANUAL

And Leighton's "Gloom Chaser" says: "Life has a way of evening up things. For every woman who makes a fool out of some man, there's another who makes a man out of some fool."

Some jokes get into the air, or into the blood, or something. Anyway, they circulate so fast, and one hears them so frequently, that something ought to be done about it. Maybe if we publish this one, that will be the last of it:

Grocer: "No, sir; no checks. I wouldn't cash a check for my own brother."

Customer: "Well, of course, you know your family better than I do."

"If," said the professional humorist, "you've heard this one, stop me." Just then the scene shifters dropped a grand piano. The jar of the falling piano caused two of the tall "wings" of scenery to fall onto the stage just in back of the professional humorist with a tremendous racket and roar, and a cloud of dust. The combined force of the falling piano and scenery unloosed some of the "flies" (scenery which is lifted up out of sight by pulley), which fell crashing to the stage. Under all this weight most of the area of the stage itself caved in, making it necessary for the professional humorist to leap to the edge of the footlights for safety. Half of the audience had by this time rushed for the exits.

But, dear reader, do you think that the professional humorist considered himself stopped in the telling of that particular joke? If you do, then there is one person left in the world who believes in Santa Claus, fairies and four-leaf clover.

A MARK TWAIN STORY

Mark Twain had finished his speech at a dinner party, and, on seating himself a lawyer arose, shoved his hands deep into his trousers pockets, as was his habit, and laughingly inquired of those present:

"Doesn't it strike this company as a little unusual that a professional humorist should be so funny?"

When the laughter that greeted this sally had subsided, Mark Twain drawled out:

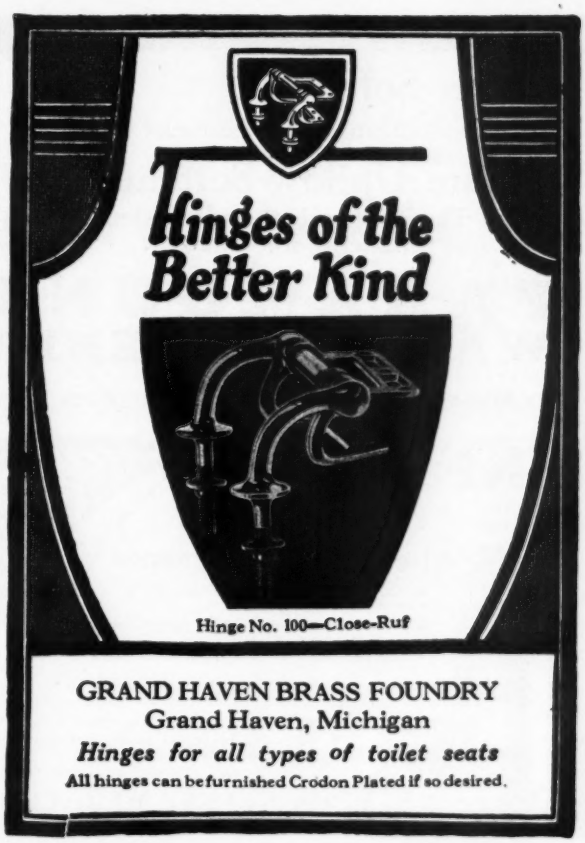
"Doesn't it strike this company as a little unusual that a lawyer should have his hands in his own pockets?"

Suggested by one of the weekly radio programs, Pipe Lines will be glad to receive from its readers contributions to the new department, "Foolish Facts," to be written in four rhymed lines, as follows:

The season now has come again
For men to wear dress shirts;
Protected by that hard-boiled front
A bullet never hurts.

Come on in, contribs! This is going to be a popular department. Write your own "Foolish Facts" and we'll publish them.

LY T


Hinges of the Better Kind
Hinge No. 100—Close-Ruf
GRAND HAVEN BRASS FOUNDRY
Grand Haven, Michigan
Hinges for all types of toilet seats
All hinges can be furnished Crodon Plated if so desired.

Have You Any Used Tools?

No doubt you have. Chances are they are laying somewhere around your shop. Possibly new tools have replaced the old. These old tools will bring you *dollars* if advertised in the For Sale columns of DOMESTIC ENGINEERING. Some plumber in some other locality may be waiting to obtain these tools, in good condition, at reduced prices. The very low rate of 8 cents per word makes the Classified Page a good buy.

Domestic Engineering
1900 Prairie Ave. CHICAGO

Water Softener

specifications are best met by using

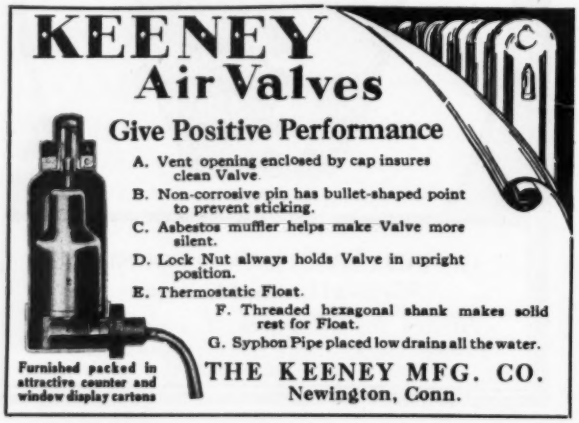
Zeolite Upflow Softeners

The economical and efficient method of producing soft water.

PARAMOUNT WATER SOFTENER CORPORATION

91 West St. New York

KEENEY Air Valves

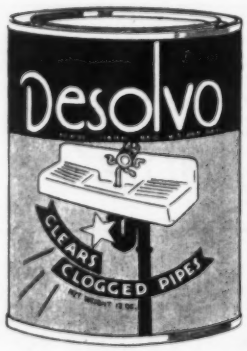


Give Positive Performance

A. Vent opening enclosed by cap insures clean Valve.
B. Non-corrosive pin has bullet-shaped point to prevent sticking.
C. Asbestos muffler helps make Valve more silent.
D. Lock Nut always holds Valve in upright position.
E. Thermostatic Float.
F. Threaded hexagonal shank makes solid rest for Float.
G. Syphon Pipe placed low drains all the water.

Furnished packed in attractive counter and window display cartons

THE KEENEY MFG. CO.
Newington, Conn.



Order Desolvo from your jobber today!

No hot water required — use cold water or on ice

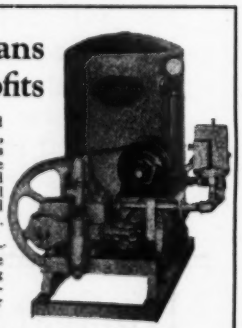
Desolvo is the real drain pipe cleaner. It cleans all waste pipes or refrigerating piping without resorting to the use of hot water. It is equally effective with hot water too.

The CHAMBERLAIN CO.
Pittsburgh, Pa.

Hoosier Quality Means Greater Sales *and* Profits

The Hoosier Shallow Well Pump is designed and built throughout to render unfailing, trouble-free service for a lifetime. It pumps quietly, year after year with minimum expense and attention. In fact, you can recommend and install it with full confidence that it will live up to the famous Hoosier reputation and will make friends for you on every installation.

Powered either by gasoline engine or electricity and built in a wide range of sizes, there is a Hoosier for every shallow well pumping job. Let us show you why it pays to recommend and install the Hoosier. Write us for complete information.



FLINT & WALLING MFG. CO.
76 Oak Street Kendallville, Ind.

Bath a Day Movement

In the stress of competition today, every bit of favorable publicity which an industry can gain has a very definite value. That is why, in the 172 cities and towns in this country where "The Story of the Bath" and the other material produced for the Bath a Day campaign have been distributed, there is undoubtedly a better feeling for the master plumber. Cities like Memphis, where the national association carried on an essay contest among the school children, have a clearer idea of the place occupied by the master plumber.

172

An interesting clipping received reads as follows: "Boonville, Ind.—Oct. 28.—(Special)—The program at the luncheon of the Kiwanis club today was in charge of E. M. Lant. Lessons in Plumbing was the subject, and the history of plumbing from the time of the Romans and the plumbing possibilities of the future were discussed by Lant."

We had the pleasure of sending to Mr. Lant the twenty-minute program for the use of master plumbers before Kiwanis, Rotary, Lions, and other clubs of that kind. Mr. Lant informs us that he made use of a part of this material.

The distribution of copies of "The Story of the Bath" at club meetings of this kind, on "Plumber's Day," holds great possibilities for master plumbers who are members of these organizations.

If you have not read "The Story of the Bath," write us for a free copy.

Little Sentences That Sell

Write one of these BLACK BOARD EPIGRAMS on your window or bulletin board each day. Many master plumbers and heating contractors find them real business getters.

When success turns a man's head he faces failure.

* * *

The money that makes money is the money that works.

* * *

Riches are no menace if we do not divorce dollars from sense.

* * *

Some people have tact, others tell the truth.

* * *

There is nothing more uncertain than a sure thing.

* * *

Better have no luck than bad luck.

* * *

If a man hasn't a red cent he is apt to feel blue.

* * *

Silence may be golden, but the golden eagle talks.

* * *

Rest has spoiled many a man who was willing to work.

* * *

Toothless dogs have soft snaps.

* * *

A doctor's pills may cure some ills, but not ill humor.

* * *

Airing your troubles will not mitigate them.

◆

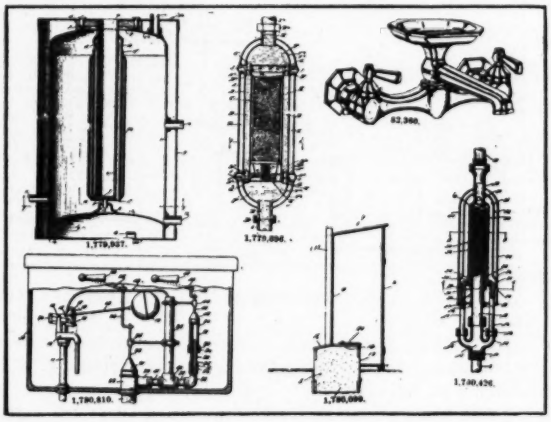
New York, N. Y.—The Snyder Plumbing Co., Inc., has leased the building at 432-434 West Forty-Fifth street.

Waucoma, Iowa—Work has been started on a new business building to be occupied by the plumbing and heating establishment of William Barbour.

PATENTS

Plumbing Department

82,360. Faucet. Chester B. Albert, Decatur, Ill., assignor to Mueller Co., Decatur, Ill., a Corporation of Illinois.



1,779,696. Electric Water Heater. Michel S. Gazelle, Detroit, Mich.

1,779,937. Water Heater. Emil F. Holinger, New York, N. Y., assignor to Hudson Electrical Heating Corporation, New York, N. Y., a Corporation of New York.

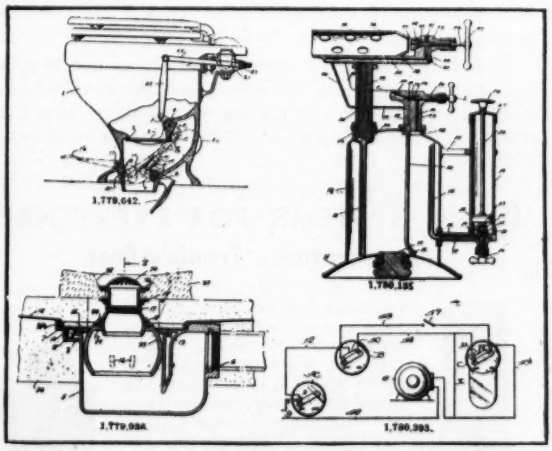
1,780,426. Hot-Water Heater. Louis B. Hyde, Detroit, Mich.

1,780,810. Closet-Flushing Device. Charles Watkins Brown, San Diego, Calif.

1,780,099. Sewage-Disposal Tank. George Van Steenburg, Orlando, Fla.

1,779,642. Double-Pan Hopper and Foot Control. John C. Schumacher, Dayton, Ohio, assignor to The Dayton Mfg. Company, Dayton, Ohio, a Corporation of Ohio.

1,779,936. Adjustable Floor Drain. Arthur Hess, Los Angeles, Calif.



1,780,152. Blowtorch. Henry Birnbaum, Shelton, Wash.

1,780,393. System of Pressure and Temperature Regulation for Heaters. David J. Jones, Chicago, Ill., assignor to Bell & Gossett Company, Chicago, Ill., a Corporation of Illinois.

IF YOU WANT QUALITY IN BRASS AND IRON GOODS, SAY

HAYDENVILLE

THE HAYDENVILLE CO., Haydenville, Mass.

. . . G & C Tanks

They're the favorites with all who insist upon the best in copper storage tanks. The name Gerstein & Cooper is found on the standard tank of Sepco Water Heater and upon the tanks of other leading manufacturers.

Insist upon G & C equipment if your customers insist upon highest quality. Thru your jobber or write us direct.

LOOK FOR OUR CATALOG IN

Gerstein & Cooper Co.

1 West Third St., So. Boston, Mass.
New York Office: 166 W. 72nd St., N. Y. C.
Canadian Agents: G. Mason Price, 832 St. James St. Montreal, Quebec, Canada

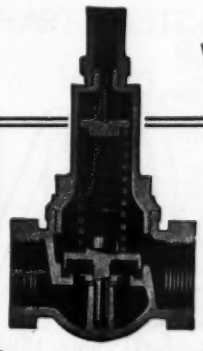
YAGER'S Soldering Salts

For All Lead Work

Write today to Dept. "D" for your sample of Yager's Soldering Salts or ask your jobber to tell you about its many time-saving uses in lead work.

ALEX R. BENSON COMPANY, Inc.
HUDSON :: NEW YORK
For list of distributors see 1930 McRae Blue Book
Sales Agency for Canada: Canadian General Electric Co., Ltd., Toronto and Montreal

KIELEY "SIMPLEX"
Water Pressure Regulating and Relief Valve



In high buildings where pressure must be maintained equally, this valve will be found almost indispensable. It is also used to good advantage on hot water storage tanks and pumps as a water pressure relief valve.

Our complete catalog is chock full of important and simple information regarding this Valve and Water Feeders. We advise you to write for it before ordering

KIELEY & MUELLER, INC. :: 24-30 West 13th Street New York, N. Y.

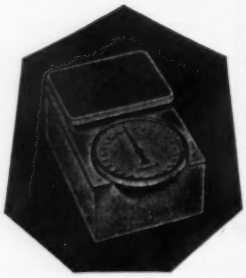
Right On the Line

ACHESON
Brass Fittings

Every Acheson Brass Fitting you install will uphold your reputation by giving the finest service possible for a brass fitting. Ask for them by name.

ACHESON MFG. COMPANY
RANKIN, PENNA.

Sell This



A bathroom or health scale that can be sold for $12.00. Larger model for $15.50. Attractive with appealing lines, colors. Six-spring mechanism, 250-lbs. Guaranteed for life. This scale cannot tip. Write for prices.

HANSON SCALE COMPANY
546 North Ada Street, CHICAGO

IMPROVED "WILHELMI"
BOILERS

Much has been said about the quality of "Wilhelmi" Boilers but the finest feature about them is the reputation they have in the trade. Plumbing and Heating Contractors who want to give their customers the most for their money invariably recommend Improved "Wilhelmi" Boilers.

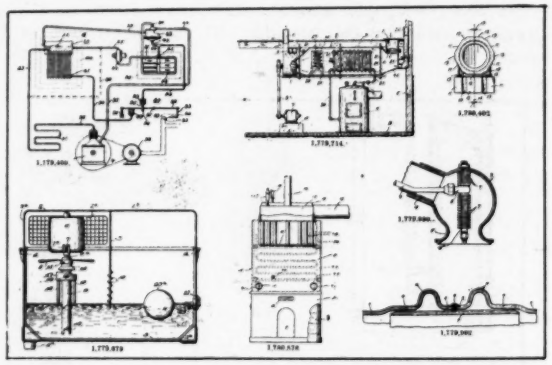
HAYES MANUFACTURING COMPANY, Makers
Paterson • • New Jersey

GENUINE NASON STEAM TRAPS
UPKEEP
KEEP DOWN

NASON
NASON MANUFACTURING CO.
71-FULTON ST. NEW YORK NY
Steam Specialty Specialists Since 1841

Heating Department

1,779,409. Refrigerating Apparatus. Ralph H. Chilton, Dayton, Ohio, assignor, by mesne assignments, to Frigidaire Corporation, a Corporation of Delaware.



1,779,679. Air-Conditioning Device. Bernard Offen, Chicago, Ill.

1,779,680. Oil Burner. Charles L. Rayfield, Chicago, Ill., assignor to Rayfield Manufacturing Company, a Corporation of Illinois.

1,779,714. Heating and Ventilating System. Albert H. W. Schmidt, Minneapolis, Minn., assignor of one-half to A. Walder, Minneapolis, Minn.

1,780,402. Pipe Fitting. Joseph A. Recko, Bridgeport, Conn.

1,780,576. Heating Boiler. Barton H. Briney, Indiana Harbor, Ind.

1,779,902. Expansible Pipe Joint. Thomas D. Davies, McKeesport, Pa., assignor to National Tube Company, a Corporation of New Jersey.

◆

New York City.—With a capital of $5,000, John J. Scully and associates have organized the firm of John J. Scully, Inc., to establish and operate a plumbing business in Manhattan. The new concern is represented by A. Eisen, 1775 Broadway.

Jackson Heights, N. Y.—The Public Plumbing Corporation has been chartered with a capital of $2,000, to establish and operate a plumbing business. The new concern is represented by Herman Wollitzer, an attorney of Jackson Heights.

New York City—The Domestic Heating and Plumbing Corporation has been organized and incorporated, with a capital of $20,000. S. Kislak, 51 Chambers street, represents the new concern, which will operate in Brooklyn, N. Y.

WATER SYSTEMS FOR EVERY NEED
Automatic . . Trouble-Free

Faultless automatic control, rugged, long-life construction and low cost are just a few outstanding features that sell Westinghouse Electric Water Systems. They are easy to install and remarkably free from servicing. Write the Small Electric Plant Section, Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., for complete information.

Westinghouse
ELECTRIC WATER SYSTEMS (Automatic)
D.E.11-29-30

8 cents for each word including heading and address. Count seven words for keyed address. Minimum $3.00 for each insertion.

CLASSIFIED ADVERTISING

One inch $4.00. Cash must accompany order. Copy should reach us eight days in advance of publication date.

Situations Open

WANTED: BY PLUMBING AND HEATING concern located in large North Texas city, a competent estimator, who has had practical experience and can layout and run any size job. Prefer young man who could qualify as heating engineer. All correspondence considered confidential. Salary $250.00 per month. Address Key 560, "Domestic Engineering," 1900 Prairie Avenue, Chicago.

WONDERFUL MONEY-MAKING EXclusive or Side-line proposition for salesmen calling on plumbing dealers. Write us today. KOIL-LES HEATER COMPANY, Geneva, Illinois.

REPRESENTATIVES WANTED IN leading cities to handle highest grade line of radiator shields and radiator cabinets. Our representatives earn $500.00 to $1,000.00 per month the year around, above expenses. Full selling plan furnished. Address Key 256, "Domestic Engineering," 1900 Prairie Ave., Chicago.

Situations Wanted

SALESMAN, FORTY-EIGHT YEARS old, twenty-five years' active selling in Middle West is compelled to locate in Ozarks on account of wife's health. Desires to represent jobber or manufacturer in territory which will permit headquarters in Southern Missouri. Address Key 559, "Domestic Engineering," 1900 Prairie Avenue, Chicago.

For Sale

FOR SALE—MANUFACTURING plant equipped for manufacture of sanitary enameled iron ware; such as bath tubs, lavatories, kitchen sinks, etc. Could readily be converted into general foundry and machine works, if desired. Well located in eastern section of middle west. Shipping facilities embrace both rail and water. Labor conditions good. Financial assistance, to some extent, could be obtained. Address Key 549, "Domestic Engineering," 1900 Prairie Avenue,

Lines to Handle

SALES AGENTS WANTED BY WELL known company manufacturing a complete line of brass valves, including competition and heavy pattern gate, globe, angle and check valves as well as a full line of radiator valves. Several very desirable territories open for producers having proper qualifications. Address Key 564, "Domestic Engineering," 1900 Prairie Avenue, Chicago.

Lines Wanted

The Advertiser a Well Known and successful sales representative—for 15 years prominent in the East, representing a well known brass manufacturer, is desirous to take on several lines on commission basis. Warehouse facilities and office arranged for. Excellent record and highest trade references. Substantial manufacturers, catering to the supply houses only, earnestly requested to get in touch with advertiser. Address Key 563, "Domestic Engineering," 1900 Prairie Avenue, Chicago.

MANUFACTURERS' REPRESENTAtive well acquainted with leading wholesalers in Philadelphia and Baltimore territory desires one or two additional lines of merit on a commission basis. Warehouse facilities. Will consider only recognized lines. Address Key 566, "Domestic Engineering," 1900 Prairie Avenue, Chicago.

WANTED—QUALITY PLUMBING SPEcialty. Commission basis. Chicago territory. By manufacturers' representative promoting sales through architects, jobbers and plumbers. Address Key 565, "Domestic Engineering," 1900 Prairie Avenue, Chicago.

TUBULAR BRASS GOODS ACCOUNT wanted. Live wire representative in Metropolitan Area of New York interested in hearing from manufacturer looking for volume from discount wholesalers in this territory. Address Key 562, "Domestic Engineering," 1900 Prairie Avenue, Chicago.

Books for Your Trade Library

SANITARY SEWERAGE OF BUILDINGS. By Thomas S. Ainge. Beginning with a study of outside sewers, this book goes fully into the best practice in inside connections, proper location and size of soil waste, and vent pipes and the roughing-in test up to the filling in of the trenches. 40 pages are devoted to the important subject of traps. Sewage disposal for country homes is also given full consideration. Size 5½x8 in. 200 pages. Cloth. Price, $1.50.

A PRACTICAL MANUAL OF STEAM, Vapor and Hot Water Heating. By E. R. Pierce. The latest and most complete document ever compiled covering the construction, operation, installation, etc., of these types of heating. A real necessity in the library of the heating man. Contains more than 50 heating tables and 60 illustrations, all up to date and helpful in the solution of your heating problems. Size 5½x 8½ in., 316 pages. Cloth. Price, $3.00 postpaid.

JOHNSON'S HANDY MANUAL ON HEATING, VENTILATING AND REFRIGERATION. By John W. Johnson. The author is a practical plumbing and heating man, having spent many years in workshops and has superintended the installation of plumbing and heating systems of all descriptions. Thirteen editions of this popular book have been exhausted. The fourteenth is just off the press. Size 4x6¾. Cloth. Price, $1.50 per volume.

Domestic Engineering

Books Sent Parcel Post Prepaid

1900 Prairie Avenue, Chicago

Miscellaneous

OIL BURNERS: GRAVITY AND Power Burners for domestic use; Rotary Power Burners for Commercial and Industrial jobs. Let us quote you on your Burner requirements. RELIANCE BURNER CO., 2219 East 26th Street, Kansas City, Mo.

USED OSTER PIPE MACHINES

2" Oster Portable, No. 412.
2" Oster Portable Gasoline Engine Drive No. 402.
2" Oster Belt Drive No. 300.
4" Oster Belt Drive No. 304.
4" Oster Motor Drive No. 304B.
4" Oster Gasoline Engine Drive on Portable Truck.
6" Oster Gasoline Engine Drive, on Portable Truck.
6" Oster Belt Drive No. 306.
6" Oster Motor Drive No. 316B.
8" Oster Belt Drive No. 308.
8" Oster Motor Drive No. 308B.

All the above overhauled and complete with equipment as supplied with new machines.

Send for list of other machines in stock. 50 Used Pipe Machines in Stock. THE O'BRIEN MACHINERY CO., 113 N. Third St., Philadelphia, Pa.

LETTER HEADS, BILL HEADS, JOB TICKETS, TIME SHEETS, ETC., FOR PLUMBERS

Reasonable prices; quick service. Send for samples. LOUIS FINK & SONS COMPANY, School Building, Laurel Springs, New Jersey.

SALES OPPORTUNITY

for a man or a sales organization

Exclusive sales franchise with protected territory on complete line of Heating and Cooking Apparatus manufactured by one of the oldest and best known companies in the country. Lines consist of Cast Iron and Steel Pipe and Pipeless Warm Air Heaters, Cast Iron and Steel Steam and Hot Water Boilers and Heating Specialties. Large new selling field which offers unusual profit possibilities. Man or Organization must be qualified to act as distributor. Home office will support authorized distributor with direct mail and newspaper advertising without cost to distributor. We do not pay drawing accounts, as our experience shows that the type of man or organization we desire does not need this help. Commissions are unusually liberal and are payable when sale is made. If you can qualify, write in confidence, outlining experience and qualifications and definite appointment will be made.

ADDRESS KEY 567, DOMESTIC ENGINEERING, 1900 PRAIRIE AVE., CHICAGO

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SIMPLEX FLUSH VALVES

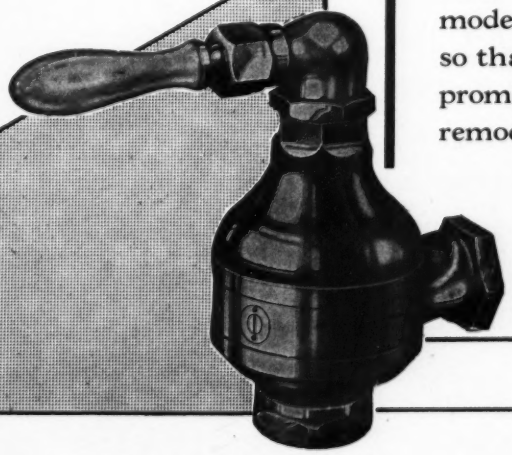
Will handle All the Jobs

Whether the job is a large apartment or office building or the smallest residence SIMPLEX FLUSH VALVES are capable of giving long, trouble-free, economical service.

Their many features, particularly the four way by-pass and their ease of adjustment, make them outstanding.

They are easy to install, moderate in original cost so that they should have a prominent place in your remodeling campaign.

Ask your jobber to supply you or if you need further technical information, write us.



LOOK FOR OUR CATALOG IN SWEET'S PLUMBING & HEATING CATALOG

The BEATON & CADWELL MFG. CO.

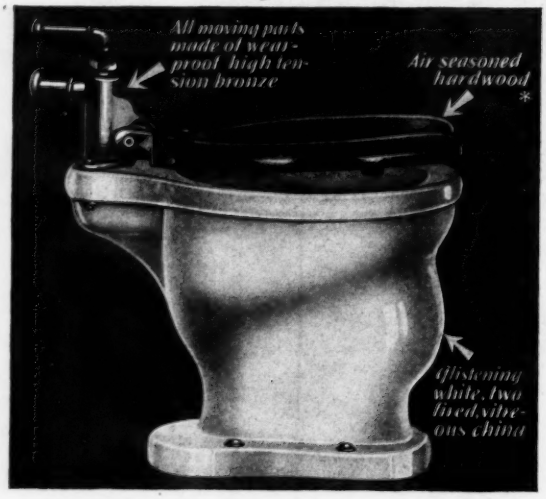
Established 1894

NEW BRITAIN, CONN.

TELL YOUR CUSTOMERS ABOUT *THIS* ECONOMY OF VOGEL NUMBER TEN AND TEN-A CLOSETS

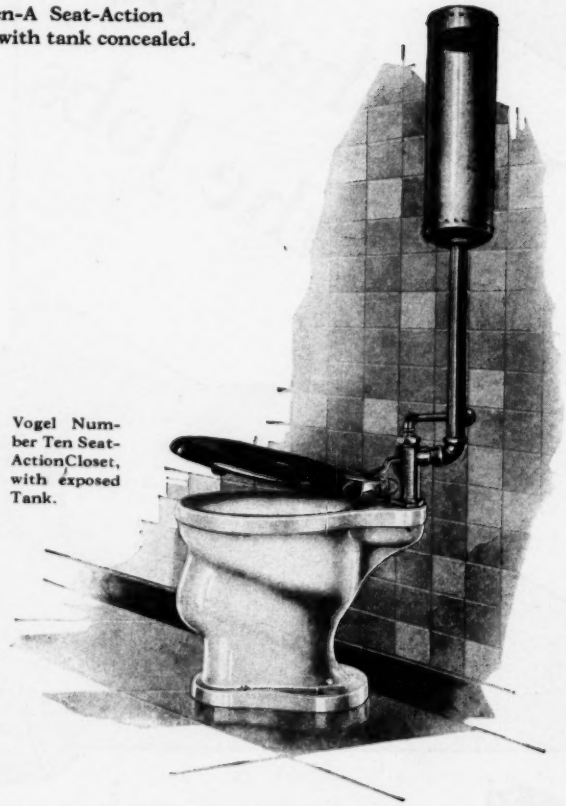
The fact that VOGEL Closets give a good thorough flush on 4 gallons of water or less means a tremendous saving in water during a year.

This feature appeals especially to school boards and plant managements where a worth-while saving can be effected by the installation of VOGEL Number Ten and Ten-A Closets.


All moving parts made of wear-proof high tension bronze
Air seasoned hardwood
Glistening white, two fired, vitreous china

Vogel Number Ten-A Seat-Action Closet Combination, with tank concealed.

This feature, together with the endurance test of the VOGEL Number Ten, which has operated since July 16, 1929 (more than 230,000 times) without even a washer being renewed, assures your customers of a most economical and efficient closet for installation in plants, factories, schools and institutions. Tell them about VOGELS, and let us supply folders, blotters and stickers.



Vogel Number Ten Seat-Action Closet, with exposed Tank.

See inside front page for VOGEL Frost-Proof advertisement

JOSEPH A. VOGEL COMPANY
Wilmington, Del. St. Louis, Mo.

• • • VOGEL *Products* • • •